West Chester's new Health and Physical Education Center

Graduate Studies

CENTENNIAL
1971/1972

West Chester State College Bulletin

Graduate Academic Calendar

FALL SEMESTER 1971

Classes begin	September 7 (Tuesday)
Thanksgiving Recess begins	November 24 (Wednesday) as classes end
Thanksgiving Recess ends	November 29 (Monday)
Fall Semester ends	December 23 (Thursday)

SPRING SEMESTER 1972

Classes begin	January 17 (Monday)
Spring Recess begins	March 11 (Saturday) as classes end
Spring Recess ends	March 20 (Monday)
Easter Recess begins	March 30 (Thursday) as classes end
Easter Recess ends	April 4 (Tuesday)
Spring Semester ends	May 18 (Thursday)
Alumni Day	May 20 (Saturday)
Commencement	May 21 (Sunday)

SUMMER SESSIONS 1972

Pre Session	June 5—June 23
Regular Session	June 27—August 4
Post Session	August 8—August 25

The College reserves the right to change the Graduate Academic Calendar if deemed necessary.

Scheduling dates for enrolled students for the Fall and Spring Semesters and for the 1972 Summer Sessions will be announced in the registration catalogues for these periods and on bulletin boards in the Graduate Office.

WEST CHESTER STATE COLLEGE BULLETIN

1971/1972 GRADUATE STUDIES

VOLUME 99/NUMBER 4/APRIL 1971

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WEST CHESTER, PENNSYLVANIA 19380

West Chester State College is accredited by The Middle States Association of Colleges and Secondary Schools, The National Council for Accreditation of Teacher Education, The American Association for Health, Physical Education, and Recreation, and The National Association of Schools of Music.

Willard J. Trezise, *Dean of Graduate Studies*

W. Clyde Skillen, *Assistant to the Dean of Graduate Studies*

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Mary Anne Domenick	*Secretary to the Dean of Graduate Studies*
Judy L. Fidler	*Secretary to the Dean of Graduate Studies*
Gail Morgan	*Secretary to the Dean of Graduate Studies*

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Director of Guidance and Counseling	Thomas B. Williams
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* On detached service from the Pennsylvania Department of Education.

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Graduate Council

(1970–1971)

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School of Social and Behavioral Sciences	Robert E. Carlson, *Associate Dean for Graduate Studies*
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School of Education	Ronald L. Gottshall
School of Health and Physical Education	Neil A. Serpico
School of Music	Richard K. Veleta
School of Sciences and Mathematics	Philip B. Rudnick
School of Social and Behavioral Sciences	William F. Burns
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School of Education	Loraine J. Camarota
School of Health and Physical Education	Bruce Campbell
School of Music	Gertrude King
School of Sciences and Mathematics	James Goodyear
School of Social and Behavioral Sciences	John Shields
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GRADUATE PROGRAMS AT WEST CHESTER

Certification and/or Master of Education

Biology
Chemistry
Counselor Education*
Earth and Space Science
Elementary Education
English
French
Geography
German
Health and Physical Education
Instructional Media Education
Latin
Mathematics
Music Education
Physics
Reading (Certification only)
Social Science
Spanish

Master of Arts

Biology
English
History
Mathematics
Music
Philosophy
French
German
Latin
Spanish

Master of Music

(Pending Pennsylvania Department of Education approval)

Master of Science

Chemistry
Health and Physical Education
Educational Research

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* For those seeking certification in Counselor Education, the master's degree is required.

The provisions of this Bulletin are not to be regarded as an irrevocable contract between the student and the College. West Chester State College reserves the right to change any provisions or requirements at any time within the student's term of attendance.

West Chester State College: An Overview

During 1971-1972 West Chester will mark its 100th anniversary as a Commonwealth institution. Throughout the Centennial Year the College will have a number of special commemorative events, taking note not only of the emergence of West Chester State Normal School in 1871 but of an even older heritage from the West Chester Academy, which laid the groundwork for today's West Chester. In this milestone year, students will hold the distinction of being "Centennial Year Students."

WEST CHESTER is a multi-purpose college with a student body of more than 5,800 full-time undergraduates. Nearly one thousand additional undergraduates attend part-time, and an additional 1,600 are enrolled (mainly part-time) for graduate studies. The College is thus the second largest of the 14 institutions of higher learning which the Commonwealth owns and maintains for the youth of Pennsylvania. West Chester's objectives are to prepare teachers for the public schools of the Commonwealth and to provide a liberal arts education for its youth.

West Chester traces its history back to the West Chester Academy, founded in 1812. The College has acquired its present dimensions through changes largely determined as the Commonwealth assumed increasing responsibility for the education of young Pennsylvanians. The institution became West Chester State Normal School in 1871, West Chester State Teachers College in 1927, and West Chester State College in 1962.

West Chester has expanded into North Campus and South Campus, where the new facilities of the School of Health and Physical Education greatly enhance the physical plant. The new Health and Physical Education Center is considered one of the foremost of its kind in the nation. The widened educational resources of the College also include the Francis Harvey Green Library, with more than 250,000 volumes; the Learning Research Center, housing a modern laboratory school and a computer center; and Schmucker Science Center. A dramatic span of six high-rise residence halls at the western boundaries of North Campus and Lawrence Center, completed in 1965, provide modern and attractive facilities for living, dining, and student activities.

The total program at West Chester is comprehensive and designed to satisfy the intellectual, physical, and spiritual needs of all students. A wide span of extracurricular activities affords students opportunities to

mingle purposefully with their colleagues and faculty, and to seek the fullest expression of their talents and capacities.

Baccalaureate Degrees Offered

The Bachelor of Science in Education degree is given in four basic curricula—elementary, secondary, music education, and health and physical education—and in one area (speech pathology and audiology) of special education. Degree curricula for public school nurses and dental hygienists are also provided. The College has a program of courses designed to meet certification requirements in the field of safety education and in the special education fields which train for the teaching of mentally retarded and physically handicapped children.

The liberal arts program leads to a Bachelor of Arts degree in arts and letters, the social and behavioral sciences, sciences, mathematics, and music; to the Bachelor of Music; and to the Bachelor of Science in business administration and chemistry.

Location of the College

The College is in West Chester, the county seat of Chester County. With a population of 16,700, West Chester is small enough to have the pleasant aspects of a tree-shaded American town, large enough to contain essential services and the substance of a vigorous community, and old enough to give the student first-hand touch with America's early history.

West Chester was settled largely by members of the Society of Friends in the early years of the eighteenth century. The town retains many charming traces of their culture. Today, West Chester is part of the rapidly growing suburban complex adjoining Philadelphia. Students have abundant opportunities to study local, county, and regional government during an era of dynamic change and growth.

Valley Forge, the Brandywine Battlefield, and the famed Longwood Gardens are nearby and Philadelphia, with its historic and cultural attractions, is only 25 miles to the east.

How to Reach the College

ROUTE 3 (West Chester Pike) from Philadelphia.
ROUTE 100 SOUTH from Downingtown Interchange of Pennsylvania Turnpike.
ROUTE 202 SOUTH from Valley Forge Interchange of Pennsylvania Turnpike.
SEPTA BUSES from 69th Street Terminal in Philadelphia.
PENN CENTRAL RAILROAD from Philadelphia to West Chester (limited schedule).

Program for In-Service Teachers

West Chester maintains an extensive two-track program for teachers in service. One phase is composed of late-afternoon, evening, and Saturday morning courses for those desiring to satisfy various professional needs, including certification requirements. The second is the graduate program.

The Graduate Program at West Chester

West Chester's program of graduate studies, introduced in 1959, has grown rapidly in the past 12 years. The College now offers the Master of Education degree in 17 disciplines; the Master of Arts in biology, English, history, mathematics, music, French, German, Latin, Spanish, and philosophy; and the Master of Science in chemistry, educational research, and health and physical education. The College also hopes to offer the Master of Music in the near future, provided approval is received from the Pennsylvania Department of Education.

Certification programs, as well as course work meeting various professional and academic needs, are also available.

With the in-service teacher particularly in mind, West Chester has designed its graduate studies for the fall and spring semesters around a schedule of late afternoon, evening, and Saturday morning classes. It is possible to undertake full-time graduate programs during the academic year and the summer sessions.

Administration

The graduate program is under the direction of the administrative officers of the College, the Graduate Council, and the administrative officers of Graduate Studies.

The Graduate Council establishes all major policies for the administration of the program, reviews all requests for special consideration, considers recommendations from the departments of the Schools, and acts as the executive council for the College administration on all matters related to the graduate program.

The administrative officers of the graduate program are the Dean of Graduate Studies, Assistant to the Dean of Graduate Studies, the Associate Deans for Graduate Studies, and the Graduate Council.

Summer Sessions

The 12-week Summer Sessions are divided into three periods: the Pre Session of three weeks, the Regular Session of six weeks, and the Post Session of three weeks.

Applications (see Admissions) should reach the Graduate Office as early as possible during the academic year preceding a Summer Session.

In addition to completing application procedures, prospective summer students must obtain from the Graduate Office a Permit to Register Card and a Registration Card, well in advance of each session. The Summer Sessions Graduate Catalogue, available in April, shows the dates for securing these cards and should be carefully consulted. Students with further questions are invited to call or visit the Graduate Office.

Fall and Spring Offerings

Graduate Catalogues which announce offerings and registration procedures for the fall semester may be obtained during the summer and for the spring semester, during the fall.

Admissions

West Chester welcomes qualified students, faculty, and staff from all racial, religious, ethnic, and socio-economic backgrounds.

Students are admitted for graduate study upon giving evidence of graduation from a four-year college or university accredited by the national. regional, and professional accrediting agencies shown on Page II, and upon demonstrating a potential for success at the graduate level.

Because West Chester is committed to serving the youth of the Commonwealth, most of the students admitted for graduate study are residents of Pennsylvania. Out-of-state students are accepted on a highly selective basis, and only if space is available. In addition to meeting the College's requirements, they must demonstrate high potential and abilities.

The Dean of Graduate Studies may admit students for varying purposes, among them:

1. To obtain the master's degree.
2. To meet certification requirements.
3. To establish credit for other reasons.
4. To gain personal growth as an auditor, receiving no credit.

Before graduate work of any kind may be undertaken, the student must gain admission to the Graduate Program, either as a **non-degree** student or as a **degree student.**

Admission Requirements for Non-Degree Students

Students who do not qualify academically for the master's degree program, as well as students who do not intend or have not yet decided to seek the master's degree but require credit for certification or some other valid reason, may be admitted as non-degree students, provided the department can accommodate them.

1. The applicant must possess a baccalaureate degree. If not from a college or university accredited in the United States, the degree must be equivalent to the baccalaureate degree conferred by the colleges and universities of this country.
2. He must present a cumulative academic average of 2.0 (with A equaling 4).

3. If, during the evaluation of an application, questions of a special nature arise, the applicant may be required to have a personal interview with a designated official of a School.

Note well:

Admission to graduate study does not constitute admission to a degree program and there is no guarantee that courses taken as a non-degree student may later be used to satisfy degree requirements.

AUDITORS. An auditor is merely a listener who does not necessarily do the work of the course. He obtains no credit. He makes the usual formal application and is enrolled as an **auditor.** Although he does not need to submit transcripts, he must obtain approval to audit from the department chairman or program coordinator and the professor for his course and he pays the regular basic fee.

Courses taken for audit may not be used later for credit.

Admission Requirements for Degree Students

Applicants for a program leading to the master's degree are considered on the basis of their academic record, interviews which evaluate their prospect for successful work at the graduate level, and various other criteria, which may include examinations or letters of recommendation.

The following admission requirements must be met:

1. The applicant must possess a baccalaureate degree. If not from a college or university accredited in the United States, the degree must be equivalent to the baccalaureate degree conferred by the colleges and universities of this country.

2. He must present an undergraduate record showing a cumulative average of at least 2.50 and a grade of at least 2.75 in his concentration. (There is one exception: the admission requirement for the Master of Science in educational research is a cumulative average of at least 2.75 and a grade of at least 3.00 in the concentration.)

3. If the department whose degree program he wishes to undertake requires the Graduate Record Examination for admission, he must take this examination.

4. His admission must be approved by the School giving his desired degree program. Before such approval is given, the applicant must be interviewed by an official designated by the School. **The applicant must arrange for this interview.**

5. He must fulfill any admission requirements which are particular to his intended program. To determine these, refer to the specific program under Programs and Degree Requirements.

6. His admission must be approved by the Dean of Graduate Studies.

7. All admissions are contingent upon the availability of space in the department.

An applicant who meets the grade requirements, but has academic deficiencies in his preparation, may be able to gain **provisional admission,** provided he demonstrates high academic promise. In order to remove deficiencies, he must take course work which will not be credited to his degree requirements. The conditions for removal of the provisional status will be specified by the chairman or coordinator.

Students admitted to a degree program must clearly understand that admission to degree study does not constitute admission to **degree candidacy.** The degree student first enters upon a pre-candidacy period of not more than fifteen semester hours. During this period he must attain specified minimum grade averages and satisfactorily complete certain requirements specified under "Degree Candidacy" in Academic Information.

Admission of Foreign Students

Students from foreign countries may be admitted to the graduate program provided they meet the requirements outlined above and the additional requirements outlined below and follow the procedures outlined below. As with all out-of-state students, foreign students are accepted on a highly selective basis and only if space is available.

In order to allow sufficient time for admitted foreign students to make their departure arrangements, the College requires that all applications and all supporting documents be on file in the Graduate Office no less than four months prior to proposed entry dates.

The information and documents which must be presented are:

1. A completed application form, together with the non-refundable application fee of $10, payable to the Commonwealth of Pennsylvania.
2. An official record of his intermediate school certificate, showing the date issued.
3. An official listing of all courses taken after receiving the intermediate school certificate. This listing must show the credits, class hours, and laboratory hours for each course as well as the year in which each course was taken.
4. Evidence of satisfactory performance on the Test of English as a Foreign Language (unless English is the applicant's native language).

   Information about the TOEFL test, including test dates and locations in foreign countries, should be obtained from the Educational Testing Service, Box 899, Princeton, N. J. (Registration forms for TOEFL tests must reach Princeton at least five weeks before the test is to be taken.)
5. Written evidence, furnished by a responsible reference, that the student has adequate financial resources to undertake and continue a program of study.

When the College has received and reviewed all supporting documents, the Graduate Office will notify the applicant of its action upon

his application. Until he has received notice of acceptance, the foreign student ought to remain in his own country; the College can assume no responsibility for his housing or his welfare. Once a foreign student has been admitted, College authorities will make every reasonable effort to find housing for him, but—except during Summer Sessions—West Chester does not provide dormitory accommodations for graduate students and cannot guarantee a place of residence.

Applicants for Advanced Standing (Credit by Transfer)

Applicants who wish to enter West Chester with credits earned through previous graduate study at another college or university may do so under the following provisions:

1. The credits must have been earned in residence at an approved graduate school.
2. The courses taken must be essentially the same as courses offered at West Chester and must be approved by the department or School in which the applicant intends to enroll at West Chester.
3. No more than six credits may be transferred.
4. The grade earned for courses to be transferred must be B or better.
5. The transcript must clearly indicate that the courses to be transferred are graduate courses and given graduate credit.
6. The courses must have been taken recently enough to fall within the six-year time limitation.

Admission of Students with a Master's Degree

Students with a master's degree from another accredited institution are admitted to West Chester for further work simply through a letter supplied by the conferring institution, confirming the award. They must file an application and pay the application fee.

Courtesy to Transfers from Other Pennsylvania State Colleges

As a courtesy, West Chester does not require the application fee from degree students from other Pennsylvania State Colleges or Indiana University of Pennsylvania who apply to take work for transfer.

The Application Procedure

1. An application form must be secured by writing to or calling at the Graduate Office.

2. The completed form must be returned to the Graduate Office.

   A photograph (2″x2″) should accompany the application.

3. A non-refundable application fee of $10, payable to the Commonwealth of Pennsylvania, must be sent to the Office of Business Affairs.

4. The applicant must request the institution which granted his baccalaureate degree to send two official transcripts directly to the Graduate Office. These transcripts must indicate the complete undergraduate cumulative average. Transcripts mailed or delivered by applicants are not acceptable.

5. If he has done prior graduate study at another college or university and wishes to transfer credit, the applicant must ask that institution to send two official transcripts to the Graduate Office.

6. If the applicant has special problems or questions, he is advised to request an interview with the Dean of Graduate Studies.

APPLICATION DEADLINE. The application procedure should be initiated at least two months before registration.

Notification of Admission

As soon as decision upon an application is reached, the applicant will be notified of the decision by letter.

Registration

Upon acceptance, students should secure a Permit to Register card and a Registration card, either by writing to or calling at the Office of Graduate Studies. They should also request the semester or Summer Session Catalogue for the period in which they will be enrolled. These Catalogues outline registration procedures and list course offerings for a given semester or Summer Session.

Fees and Expenses

[Fees are subject to change without notice.]

[Unless otherwise specified, all fees must be paid by check or money order payable to: Commanwealth of Pennsylvania.]

Basic Fee

Legal residents of Pennsylvania—$36 per semester hour of credit.
Out-of-state students—$43 per semester hour of credit.

Application Fee

A fee of $10, refundable under no circumstance, is required.

Late Registration Fee

All fees are due and payable on the date of registration, after which a late fee is charged.

Housing Fee (Summer Sessions Only)

The housing fee for resident students is $120 for the Regular Session and $60 for the Pre or Post Session. The fee covers accommodations in a double room in one of the College residence halls and meals in the dining hall in Lawrence Center. A private room is $2 additional per week. (Housing for graduate students is not available during fall and spring semesters.)

Cost for Binding the Thesis or Research Report

THESIS. Students are required to pay the imprinting and binding costs for three copies of their Thesis at $3.50 each.

RESEARCH REPORT. Students are required to pay the imprinting and binding costs for three copies of their Research Reports, at $3.50 each.

Instructions for the payment of these costs may be obtained at the Graduate Office.

Transcript Fee

The transcript fee is $1 per transcript. West Chester students receive their first set of transcripts at no charge but pay the fee thereafter.

Auditor Fee

An auditor (a student who attends a course without credit) pays the same fees as other students.

Diploma Fee

A diploma fee of $5 is charged prior to graduation. Checks for this fee are made payable to "Commonwealth of Pennsylvania" and must be delivered to the Graduate Office.

Music Fees

In addition to the basic fee, graduate students in music are subject to the following schedule of fees:

Instruction

Piano, Organ, Instrument, or Voice—one half-hour lesson each week	$55 per semester
Instrument Class or Ensemble—2 hours per week	$35 per semester

Rentals

Any Band or Orchestra Instrument—(minimum charge—$3)	$1 per week

Practice Time

Piano Room two hours per day—(minimum charge—$3)	$1 per week
Organ room two hours per day—(minimum charge—$4.50)	$1.50 per week

Instrumental Room

2 hours per day—(minimum charge—$1.50)	$.50 per week

Student Activities Fee

[Cash or check drawn to Intracollegiate Governmental Association.]

Full-time graduate students (those carrying at least twelve credits) pay the I.G.A. student activities fee of $25 per semester in the fall and spring semesters. The fee admits them to all social and athletic events on student status and helps defray the cost of many cultural and special events. If they wish the benefits of the activities program, part-time students may pay the fee at their own initiative.

Both part-time and full-time students are required to pay the activities fee for all Summer Sessions. This fee, which covers—among other things—the cost of summer tours, is as follows:

$3.50 for the Regular Session

$1.75 for the Pre or Post Session

Car Permit

[Cash or check drawn to Intracollegiate Governmental Association]

Students who drive on campus are required to have a permit, available at a minimal charge at registration and in effect for 12 months. The permit for summer only is half the price of the annual registration.

Library Card/I.D. Card

In order to borrow books from the library, students must present identification. For graduate students, this may be either a Library Card or an I.D. (Identification) Card. It is a simpler procedure to obtain the Library Card, which does not require a photograph, but the I.D. card serves broader purposes and full-time students generally find it useful to have one. The fee for either card is $1. The I.D. card is issued at the College Bookstore, the Library Card at the library.

Refunds — Fall and Spring Semesters

No portion of the basic fee shall be refunded if the student has attended one-third or more than one-third of the class periods scheduled during a given semester.

If a student withdraws from a course, for approved reasons, before one-third of the scheduled class periods have been completed, he shall then be entitled to a refund of one-half of the fees paid.

If a student registers for a course and then withdraws before the second scheduled class meeting, he will receive a refund of all but $10.

Requests for refunds must be made in writing to the Office of Business Affairs.

Refunds will not be made to students who are suspended or dismissed or who drop courses without the approval of the Dean of Graduate Studies.

Refunds — Summer Sessions

For the Summer Sessions, refunds will not be made to students who voluntarily withdraw or are indefinitely suspended or dismissed from the College; these regulations apply after the first day of class attendance.

In cases of personal illness, certified by an attending physician, or for other emergency reasons which may be approved by the Trustees, the College will refund the portion of the basic fees for the part of the Session which the student does not spend in the College.

Financial Aid

LOANS

National Defense Student Loans

West Chester participates in the program which, under the National Defense Education Act of 1958, makes loans available under arrangements which include deferred payment and other advantages, particularly for those who become teachers. Approval of loans depends upon the student's need for financial assistance and the availability of funds. Application forms and detailed information may be obtained from the Director of Financial Aid in Lawrence Center.

Pennsylvania Higher Education Assistance Agency Loan Guarantee Program

Under the Pennsylvania Higher Education Assistance Act of 1963, as amended, Pennsylvania residents who meet qualifications may obtain loans at low interest rates and under desirable deferred–payment provisions through banks who participate in the program. A list of participating banks, together with literature detailing the program, is available for interested students in the Office of Financial Aid. A student seeking this loan should apply to a participating lender near his home at least 60 days in advance of need for funds.

GRADUATE ASSISTANTSHIPS

Commonwealth Assistantships (Teaching and Research)

As of September, 1971, a number of these new assistantships will be available to graduate students qualified to teach, assist in research, or perform other professional duties. The salary begins at $2,705 for the academic year, with 20 pay periods. Course fees are waived. Applications should be initiated with the Graduate Office.

(Non-Teaching)

This Commonwealth program provides a limited number of graduate assistantships offering full-time students up to $1,200 per academic year for various non-professional duties. The graduate assistant must work 15 hours per week. His course fees are waived by the College. Students apply for assistantships directly to the Graduate Office.

Resident Advisers

Opportunities to serve as resident advisers for undergraduate students are open to men and women graduate students. Advisers live in the College residence halls and counsel undergraduates in their personal, social, and educational development. Depending upon the number of hours worked, advisers receive a stipend ranging from $45 to $90 per week. Room and board are also provided. Application for advisership is made to the Dean of Men or the Dean of Women.

College Services and Student Living

Francis Harvey Green Library

The Francis Harvey Green Library offers the graduate student excellent facilities for study. The library is housed in an attractive modern building, completed in 1966 and containing many special features, including more than 300 individual study carrels, a special-collections room, a micromedia room, a soundproof typing room, a student-faculty lounge, a children's room, and a curriculum laboratory. With a collection of more than 250, 000 volumes and subscriptions to more than 2,500 journals, the library is rapidly growing and is an increasingly important resource for both teaching and research.

The general collection is augmented by an extensive micromedia collection representing more than 300,000 volumes. The micromedia material includes books, periodicals, newspapers, and doctoral dissertations. Adequate facilities for reading this material are available. The special-collection room houses the Chester County Collection of Scientific and Historical Books; the Normal Collection (a collection of historical books on physical education and publications by and about the faculty and alumni); the **Biographies of the Signers of the Declaration of Independence,** by John Sanderson; and the Shakespeare Folios. Other collections of note are the juvenile, curriculum, and music collections and the Philips collection of autographed books. As part of a statewide program to promote world cultural understanding, the library is developing an extensive collection of materials on French culture.

The many services of the library are available to all graduate students. Of particular interest are the bibliographic, information, interlibrary loan, and photoduplication services. The library also mounts art and photographic exhibits of note throughout the year.

Bureau of Research and Related Services

The Bureau of Research and Related Services fosters the development of basic, applied, and institutional research and provides facilities for the tabulation and analysis of research data. The research function of the Bureau encompasses studies initiated by the faculty and administrative

staff as well as cooperative endeavors carried on under the joint sponsorship of the College and various educational agencies and foundations. The Bureau assists faculty and students to secure financial support for their research projects. A computer center, statistical laboratory, and research facilities are maintained in the Learning Research Center.

Data processing services include the tabulation and summarization of information essential to the operation of the various administrative divisions of the College and the statistical treatment and computer analysis of experimental data obtained from faculty and student research activities.

The Delaware-Chester Regional Instructional Materials Center

Graduate students may avail themselves of the facilities of the Delaware-Chester Regional Instructional Materials Center, which serves the public schools of Delaware and Chester Counties. The Center, operating under a State-supervised plan, has nearly 5,000 films.

HOUSING

West Chester is able to provide housing facilities for its graduate students only during the Summer Sessions, when accommodations in College residence halls, with board included, are available for single men or women, through the offices of the Dean of Men or Dean of Women. If residing in College residence halls during the summer, graduate students are expected to abide by the housing regulations governing undergraduate students.

The College has no facilities for married students. Area newspapers and realtors should be consulted.

College Policy for Storm Closings

If storm conditions make it necessary to close the College, announcement will be made over area radio and television stations, which employ a system of code numbers to make known school closings. West Chester's numbers are:

853	Day Classes for Undergraduate Students
2853	Graduate Classes and Other Evening Classes

Student Health Service

To meet emergency and first-aid needs, and to perform routine infirmary treatment of minor illnesses and minor surgical conditions, two part-time physicians and four registered nurses are available, at no cost to students. Beyond these services, the College does not furnish medical care nor bear

the costs of medical or surgical treatment or hospitalization. The community of West Chester has qualified physicians and excellent hospital facilities. The Service is in Reynolds Hall where, for emergencies, a nurse is on duty on a 24-hour basis.

Full-time (but not part-time) graduate students may take advantage of a group medical and accident policy, approved by the College and covering accidents and illness on a twelve-month basis. The policy may be obtained at a minimal annual premium from the Health Service.

Guidance and Counseling Center

The professional services of the Guidance and Counseling Center are available at any time to students needing assistance with problems of an academic, social, or personal nature. The staff of the Center is experienced in the administration of psychological tests, counseling, and personality evaluation. All conversations and test results are confidential. The troubled student may feel completely free to utilize the services of the Center either in daytime hours or evenings, by appointment.

The Center, which is in Ramsey Hall, also provides information, materials, and guidance concerning graduate scholarships, fellowships and grants, and study at the graduate level.

Speech and Hearing Clinic

Graduate students who need help in meeting minimal speech standards may use the services of the Speech and Hearing Clinic at no cost. The Clinic is conducted by the Department of Speech and Theatre.

Veterans' Affairs and Selective Service Information

Veterans' affairs are dealt with in the offices of the Director of Scheduling and Academic Records, Administration Building. The College adviser on Selective Service is the Dean of Undergraduate Studies, whose offices are also in the Administration Building.

PLACEMENT AND CAREER SERVICES

The College maintains active career planning and placement services for its students and graduates. The Office of Placement and Career Services, assisted by the Schools and Administration of the College, helps graduates

and graduate students plan their careers and obtain desirable positions related to their interests and education.

Counseling is offered to all students and graduates in career planning, opportunities, and employment trends. The Office also renders assistance to school and college officials seeking qualified teachers and administrators. Primarily for the benefit of arts and sciences graduates, communication is maintained with government agencies, business, and industry. The Placement Office libraries provide information about career opportunities, public and private schools, job-training programs, Civil Service careers, application forms and procedures, and job requirements.

The services are available to graduate students at no cost, subject to the following College policy:

1. Graduate students whose baccalaureate degree was not received at West Chester and who have satisfactorily completed less than 15 semester hours are eligible for limited service, comprising use of the Placement Office libraries and guidance from the staff.

2. Students who have satisfactorily completed more than 15 semester hours of graduate study at West Chester or who hold undergraduate degrees from the College are eligible for the full services of the Office. Full services include: registration, development and mailing of credentials to prospective employers, career counseling, provision of private facilities for on–campus interviews arranged by the applicant, and participation in a program of on–campus interviews arranged by the Office of Placement and Career Services.

GRADUATE ASSOCIATION

The West Chester State College Graduate Association, formed in 1968, concerns itself with the welfare of graduate students and provides avenues for communication among students, faculty, and Administration. All graduate students are members of the Association, whose officers represent the student body in various capacities and work in the interests of West Chester graduate students. The Association's monthly publication, the **Third Degree,** gives voice to various student concerns, disseminates timely information, and encourages participation in campus activities ranging from recreational opportunities to cultural events.

In its developing program, the Association sends representatives to Graduate Council meetings, considers curriculum needs, and provides orientation for new graduate students. Association headquarters are on the second floor of the Administration Building and may be visited by graduate students during regular College hours.

The expenses of the Association are met through the Intracollegiate Governmental Association, the all-campus organization of students.

HONOR SOCIETIES

ALPHA PSI OMEGA. Rho Mu, the West Chester chapter of this coeducational national dramatic fraternity, is open to both undergraduate and graduate students. Organized in 1961, it is responsible for one major production each year, presented in cooperation with the Little Theatre. Membership is by invitation.

PHI ALPHA THETA. The Nu Sigma chapter of this international honor society in history is open to undergraduate and graduate students. Membership is by invitation and recognizes scholarship. The chapter is sponsored by the Department of History and was formed in 1968.

PHI DELTA KAPPA. Organized in 1965, the West Chester chapter of this international graduate honor society for men is sponsored by the School of Education. Membership, by invitation, recognizes scholarship in all fields of education.

PHI EPSILON KAPPA. Open to both undergraduate and graduate men students, the local chapter of this national professional fraternity seeks to advance the profession of health and physical education. The chapter is sponsored by the School of Health and Physical Education.

PHI MU ALPHA (SINFONIA FRATERNITY). Rho Sigma, formed in 1967, is the West Chester chapter of this national professional fraternity for men in music and is open to undergraduate and graduate students. Phi Mu Alpha advances the cause of music in America, and membership, by invitation, recognizes scholarship.

SIGMA ALPHA IOTA. This international professional fraternity for women is dedicated to service in the field of music. Epsilon Epsilon chapter, formed in 1968, is open to both undergraduate and full-time graduate women. Membership is by invitation and recognizes scholarship. Candidates must perform successfully in an audition recital.

Cultural Events

Students are urged to take advantage of the rich cultural opportunities at West Chester. Among these are the All-Star Series, the Chamber Music Series, the William Pyle Philips Lecture Foundation Series, the Campus Cinema Club, the Intracollegiate Governmental Association evening series of programs, Theatre 208, and the many recitals and concerts given by faculty and students of the School of Music. The Office of Cultural Affairs, in the Administration Building, will supply literature announcing the various scheduled events.

European Summer Tour

An annual European summer tour, which the School of Social and Behavioral Sciences conducts, offers graduate students—in-service teachers particularly—an opportunity for travel and study under pleasant and profitable circumstances. Open to graduates and undergraduates, the tour

includes seminars and lectures along its route and provides six hours of credit (see SSc 550 in Course Descriptions). Museums, galleries, cathedrals, operas, music festivals, and additional cultural events highlight the trip, which covers some ten countries. A faculty member from the School of Social and Behavioral Sciences is always in charge. Further information may be sought from the School.

Sports Activities

Opportunities for tennis, swimming, and other sports are available through the facilities of the School of Health and Physical Education. Inquiry may be made at the office of the Director of Athletics.

Academic Information and Regulations

Degree Candidacy

Summary of Degree Requirements

Class Attendance

Regular attendance at classes is considered essential to responsible graduate study. Absence from class does not exempt the student from course responsibilities. If, for valid reasons, an examination is missed, the student sees his professor at the earliest possible time to arrange for a make-up examination.

Attendance in Inclement Weather

The College convenes classes regardless of weather conditions, but students are not asked to take risks by driving on hazardous roads. If absent owing to dangerous driving conditions, students must assume responsibility for work missed.

For system of announcing College closings, see College Services and Student Living.

Class Hours

Classes meet during late afternoons, evenings, and on Saturday mornings in the fall and spring semesters. The Summer Sessions are composed of: **Pre Session,** which meets in evening hours for three weeks in June; **Regular Session,** which meets in morning hours for six midsummer weeks; and **Post Session,** which is held for three weeks in August, with morning hours.

Student Responsibility

It is the responsibility of the student to know and observe all regulations and procedures relating to the program he is pursuing. In no case will a regulation be waived or an exception granted because a student pleads ignorance of the regulation or contends that he was not informed of it

by his adviser or other authority. A student planning to graduate should give careful attention to the dates relating to application for graduation and other pertinent deadlines. (See schedule of deadlines at end of this chapter.)

Student Load

The normal work load for the Summer Sessions is one semester hour of work for each week of enrollment. It is not possible to carry more than one course during the Pre or Post Session. Provided permission is secured in advance from the Dean of Graduate Studies, students may carry more than six semester hours of work in the Regular Session.

The normal work load for a full-time student during the fall and spring semesters is twelve semester hours. With approval from the chairman or coordinator, the load may be increased.

Fully employed teachers may not register for more than six semester hours during a semester unless given permission by the Dean of Graduate Studies.

Classification of Students

Depending upon the circumstances of his admission, a student will be classified in one of the categories outlined below.

A. DEGREE STUDENTS

1. **Full status**—granted to a student who meets all entrance requirements. See Admissions.
2. **Provisional status**—may be granted to a student who:

a. Has not yet taken the Graduate Record Examination in programs requiring it for admission.

b. Is unable to present all prerequisites demanded by the department of specialization.

c. Has certain other academic deficiencies.

B. NON-DEGREE STUDENTS

1. **Unclassified.**

a. A student who is not planning to seek a degree.

b. A student who fails to meet the academic average required for a degree student.

c. A student who qualifies for a degree program but cannot be admitted owing to lack of openings in the desired program.

An **unclassified** student may petition for **full status** by making written request to the intended major department, which must approve the change of status.

Credit earned as an unclassified student may be applied to degree requirements later only upon the recommendation of the department concerned, and provided the credits are appropriate to the requirements of the particular program and are completed within the time limit. Unclassified students who intend to seek full admission later are advised to consult with the department chairman in advance in order to select course work appropriate for transfer to a degree program.

2. **Certification**—applies to course work taken for purposes of teacher certification.
3. **Transfer of Credit**—applies to course work taken for transfer to another institution.
4. **Professional Growth.**
5. **Auditor.** (See "Auditors" in Admissions.)

Grading System

The following grading system is employed:

Grade	Interpretation	Quality Points
A	Superior	4
B	Above Average	3
C	Average	2
D	Below Average (see below)	1
F	Failure	0
I	Incomplete (see below)	
WF	Withdrew Failing	0
WP	Withdrew Passing	
Aud	Audit	
Pass	No Credit Given	

D's are not acceptable as credit for degree requirements. Degree students must repeat any required course graded D. Both the D and the second grade received will be included in the cumulative average. Similarly, a degree student receiving an F in a required course must repeat the course and both the F and the second grade will be included in the cumulative average.

Removing Incompletes

Unless the Graduate Council grants an exception, courses given an Incomplete for valid reasons, such as unavoidable absence during final examinations, must be completed within the next 90 calendar days or the I will become an F. The 90-day requirement does not pertain to Methods and Materials of Research nor to the Thesis or Research Report.

Grade Reports

Official grade reports are issued soon after the end of a semester or summer session. Students are reminded to check their reports against grade requirements and other regulations and to have their reports at hand when consulting with advisers.

Cancellation of Courses

The College reserves the right at any time to cancel an announced offering of a course if registration does not justify continuance.

Changes in Name or Address

The Graduate Office must be notified immediately of any change of address or change in name owing to marriage or court order.

Changes in Curriculum

In order to change from one program to another the student must:

1. Request the change in a letter to the Dean of Graduate Studies.
2. Request the chairman or coordinator of his present program to send a letter of release and the student's academic folder to the Graduate Office.
3. Request the chairman or coordinator of the program in which he seeks enrollment to send a letter of approval to the Graduate Office.

See also "Changing to Auditor Status," below.

Transferring Credit from Other Institutions

West Chester students planning to take work at other institutions for transfer to West Chester must first obtain approval from their chairman or coordinator in order to determine that the institution is recognized for transfer and that the course or courses will be acceptable as transfer credit for the degree. For conditions under which transfer credit may be used for degree requirements, see "Applicants for Advanced Standing" in Admissions.

Withdrawal from Courses in Fall and Spring Semesters

Prior to the sixth meeting of any class, a student has the privilege of withdrawing from a course. He does so by:

1. Obtaining from the Graduate Office a withdrawal form.
2. Securing his professor's signature on the form.
3. Securing the signature of the chairman or coordinator for the course and the signature of the Dean of the School or the Associate Dean for Graduate Studies of the School giving the course.
4. Returning the signed form to the Graduate Office.

His withdrawal will have no effect on his grade record.

After the first six meetings of a class, a withdrawal will not be approved by the Dean of Graduate Studies except for special reasons or emergencies. In this circumstance the grade record will show either a WP (Withdrawn Passing), with no effect on the record, or a WF (Withdrawn Failing), producing an F on the permanent record.

Students who drop a course without official permission—either before or after six class meetings—receive an F and are automatically dismissed from the Graduate Studies program. Students so dismissed may be readmitted only if the Graduate Council acts favorably on a written application addressed to the Council. For the refund policy on withdrawals, see Fees and Expenses.

Withdrawal from Courses in Summer Sessions

Although the grade policy for withdrawals during Summer Sessions is essentially the same as for fall and spring semesters (see paragraphs above), the refund policy differs: after one day of class attendance at any Summer Session no refunds are made to students who voluntarily withdraw. (Consult Fees and Expenses.)

If a student withdraws within the first week of classes in a Pre or Post Session, the withdrawal will have no effect on his grade record. In a Regular Session, the academic privilege of withdrawal extends to the first two weeks of classes.

The procedure for withdrawing from a Summer Session course is identical to that described above under "Withdrawal from Courses in Fall and Spring Semesters."

Withdrawal from the College

A student intending to withdraw completely from the graduate program must comply with the procedures outlined under "Withdrawal from Courses in Fall and Spring Semesters" (above) and, in addition, give the Dean of Graduate Studies written notice, indicating why and when he plans

to withdraw. His last day in classes will be considered the date which terminates his connection with the graduate program.

When, owing to illness or other emergency reasons, a student discontinues his work at the College, he must notify the Dean of Graduate Studies at once.

(See Fees and Expenses for refund policy.)

Dismissal from the College

In instances of dismissal, the College reserves the right to refuse to give the reason for dismissal in writing.

Changing to Auditor Status

Before the sixth meeting of a class, a student may change his status in the class to **auditor.** He initiates this change by calling at the Graduate Office for a change-in-class-status form.

The completed form must be submitted to the Graduate Office for approval.

Time Limitation on Degree Programs

All degree requirements must be satisfied within six consecutive years from the date of admission, either as a degree or non-degree student. This limitation applies also to courses taken elsewhere and accepted at West Chester as transfer credit applying to degree requirements. (See "Applicants for Advanced Standing" in Admissions.)

In unusual cases, such as military service or prolonged illness, a limited extension of time may be sought by written petition to the Graduate Council.

Students are reminded that all details concerning their research report or thesis must be completed within the six-year limitation.

Reapplication Requirement for Admitted Students

An admitted student who has not taken graduate courses for a period of four years or longer must reapply for admission and pay the application fee.

Residence Requirement

The minimum residence requirement for the master's degree is either a fall or spring semester on full-time status or a Regular Summer Session in which two courses are completed.

Since all courses given in the Graduate Studies program are taught on campus, students should not expect to take off-campus or extension courses at West Chester.

Transfer of Credit

Not more than six semester hours of credit taken in residence at another accredited institution may be transferred to be applied to degree requirements at West Chester. For conditions under which credit may be transferred, see "Applicants for Advanced Standing" in Admissions.

Obtaining Transcripts

Upon written request, transcripts of work taken at West Chester may be obtained from the Office of Scheduling and Academic Records. A check or money order, made payable to the Commonwealth of Pennsylvania, must accompany the request, which should indicate the period of attendance at the College, the curriculum pursued, and any change of name during enrollment. For transcript fee, see Fees and Expenses.

Permanent Certification

Under Commonwealth regulations which became effective July 1, 1969, two levels of permanent certification are available to teachers:

The Instructional II Certificate requires (a) three years of satisfactory teaching under an Instructional I (formerly called Provisional) Certificate, (b) the attainment of 24 semester hours* of post-baccalaureate or graduate study at a regionally accredited institution, and (c) the recommendation of the applicant's most recent county or district superintendent. The Instructional II Certificate was formerly described as the Permanent Certificate.

The Instructional III Certificate, which became effective July 1, 1969, requires (a) five years of satisfactory teaching at a regionally accredited institution, (b) the attainment of a master's degree with emphasis in a subject or teaching area, and (c) the recommendation of the applicant's most recent county or district superintendent.

Graduate courses taken to extend an Instructional I Certificate to include additional fields may be used to obtain the Instructional II or the Instructional III Certificate.

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* Those who attained the Provisional Certificate before October 1, 1959, are required to take only six semester hours of post-baccalaureate work; those who attained the Provisional Certificate after October 1, 1959, but before October 1, 1963, are required to complete only 12 semester hours of post-baccalaureate work.

Renewal of Provisional Certification

Under Commonwealth regulations which became effective July 1, 1969, the Instructional I (formerly described as Provisional) Certificate may be renewed by completing 12 semester hours of post-baccalaureate or graduate study at a regionally accredited institution. The renewed certificate extends the permitted teaching period for another three years from date of issue. The recommendation of the applicant's last district or county superintendent is also required.

Graduate Record Examination

Scores for the Graduate Record Examination are required for most of the degree programs, either at the time of application or at some later period. The nature of the G.R.E. requirement varies within the Schools. The prospective degree student will therefore need to consult the program outline for his intended field of study. (See Programs and Degree Requirements.)

The Graduate Record Examination is administered by the Educational Testing Service, Box 955, Princeton, New Jersey 08540 and is composed of the Aptitude Test (morning test) and the Advanced Tests (afternoon tests in the fields of concentration). Application forms and data may be obtained either by writing directly to the Service or from the Graduate Office. The examinations may be taken at any of the testing centers designated by the Educational Testing Service. One of these is West Chester, where the Graduate Office periodically administers the Tests—generally in October, December, January, April, and June.

Application forms must be filed with the Educational Testing Service at least 15 days prior to the date of any examination.

The Area of Specialization (Comprehensive) Examination

The area of specialization examination is a comprehensive examination over the student's major field, and is constructed, administered, and evaluated by the student's major department. Degree candidates must take this comprehensive examination (oral and/or written) upon completion of 28 semester hours of credit.

The degree candidate is urged to confer with his adviser concerning the comprehensive examination at the earliest possible date and is reminded that it is his responsibility to make application to take this examination through the department chairman or coordinator concerned.

Other Examinations

In addition to the comprehensive examination, which is required in every program, other examinations may be demanded at the discretion of a School. Students will need to consult the outline of their program under Programs and Degree Requirements, and must also discuss all aspects of examination requirements with their chairman, coordinator, or adviser. It is incumbent upon the student to initiate such discussions.

Research Requirements

The presence of a research requirement is at the discretion of the School or department. Consult specific programs to determine whether independent study, directed either toward the Thesis or a Research Report, is required, offered optionally, or omitted.

Distinction Between a Research Report and the Thesis

The Graduate Council has defined the Research Report and the Thesis as follows:

A Research Report is a written record of a scientific investigation to determine the facts of a condition; hence it is essentially a report on a problem. It demands of the researcher a knowledge of the techniques of research and scientific accuracy.

A Thesis is the written account of an exhaustive research to support or refute a belief or a hypothesis. It differs from the Research Report in that it is more comprehensive and more generally demanding of the writer's knowledge, skills, and powers of scholarship.

The Graduate Council has established the following guidelines with reference to the Research Report and Thesis:

1. The student should register his decision to do a Research Report or the Thesis at the completion of the course entitled Methods and Materials of Research.
2. The department concerned must approve the subject of the Research Report or Thesis.
3. A detailed outline of the Thesis must be approved by the Dean of Graduate Studies before the student is authorized to begin his investigation. This must be on file 30 days prior to approval.
4. Upon approval by the department, the Thesis or Research Report must be typed and bound in accordance with specifications established by the Graduate Council. These specifications are on file in the offices of the department chairmen. "Form and Style in Thesis Writing," by William Giles Campbell, must be used as a format. Three copies of the Thesis or Research Report should be submitted for binding to the Graduate Office, together with three copies of the abstract (250-500 words).

If the candidate wishes bound copies for himself, he must submit additional copies accordingly.

For cost of binding, see Fees and Expenses.

Degree Candidacy

Requirements for Admission to Degree Candidacy

Application for degree candidacy must be made within the first 15 semester hours of the pre-candidacy period.

During the pre-candidacy period, the student must:

1. Complete those courses which his department or program specifies as prerequisite to degree candidacy.
2. Perform satisfactorily on examinations which his department or program may require for admission to degree candidacy.
3. Achieve an overall grade average of at least 2.75 and an average of at least 3.00 in the concentration.
4. Show evidence of academic, personal, and professional qualities which satisfy both the administrators of the Graduate Program and the chairman or coordinator of his field.

Procedure for Application to Degree Candidacy

1. The student must file an application for admission to **degree candidacy** with the Dean of Graduate Studies on an official application form available in the Graduate Office.
2. When the application has been evaluated by the department or School concerned, the Dean of Graduate Studies will inform the applicant of his acceptance or rejection.
3. Upon notice of acceptance, the degree candidate must communicate with his chairman or coordinator in order to initiate the process of selecting his program of study.
4. At this point, the candidate must also submit a **written request** for the appointment of his adviser. He addresses this request to the chairman of his department or the coordinator of his program.

Approval for degree candidacy must be given by officials of both the academic discipline and by the Dean of Graduate Studies. (The College

reserves the right to refuse admission to candidacy without giving reasons in writing.)

Reapplication for Degree Candidacy

Applicants who fail to qualify as degree candidates are classified as non-degree students. In order to reapply for degree candidacy they must attain an average of 3.00 in course work **specified by their department chairman or coordinator.**

Advisory System

Upon admission to a degree program, students will be fully counseled by their department chairmen regarding the College's advisory system. It is important for the degree student to note that the initiative for seeking advisement, throughout his program, rests with him. The student must also take the initiative in seeing that his degree requirements are fulfilled. (See also "Procedure for Application to Degree Candidacy," above.)

Summary of Requirements for the Master's Degree

The master's degree will be granted upon:

1. Admission to candidacy for the degree.

2. Submission and approval of the professional research thesis in those programs requiring it.

3. Completion of all graduate courses with an overall quality-point average of 2.75, an average of B in the area of concentration, and achievement of satisfactory scores on the Graduate Record Examination, if required. (See department requirements.)

4. Satisfactory performance on a final oral and/or written comprehensive examination conducted by the student's advisory committee in the field of specialization.

   It is the responsibility of the candidate to apply for this examination.

5. Meeting all required deadlines. (Refer to the schedule of deadline dates below.)

Additional Requirement for the M.Ed. Degree

In addition to the requirements stated above, candidates for the Master of Education degree must give evidence of successful teaching experience as approved by the chairman of the department in which they are enrolled. Other experience in lieu of this requirement must be approved by the Graduate Council.

Deadline Dates for Students Planning to Graduate at End of Spring Semesters

March (first Monday).....Last day to file letter of intent to graduate.

April (first Monday) .....Diploma fee due at Graduate Office. (See Fees and Expenses for amount. Make check or money order payable to: Commonwealth of Pennsylvania.)

April (third Monday) .....Last day to take comprehensive examinations.

April (last Friday) .....Last day to submit grades (Pass or Fail) on comprehensive examinations to Graduate Office.

May (first Friday) .....Last day for professors to assure Graduate Office that candidates planning to graduate in May will receive a grade of C or better for all course work taken during final semester.

Note: Students planning to graduate in August must file letter of intent to graduate by the first Friday in June.

Programs and Degree Requirements

School of Arts and Letters

John W. Clokey, *Dean*
Powell S. Thomas, *Associate Dean for Graduate Studies*

Department of Art
Department of English
Department of Foreign Languages
Department of Philosophy
Department of Speech and Theatre

Degree Programs Offered:

Master of Education in
- English
- French
- German
- Latin
- Spanish

Master of Arts in
- English
- French
- German
- Latin
- Spanish
- Philosophy

Art

Mr. McKinney, Chairman

ASSOCIATE PROFESSORS
Jack G. Hawthorne, B.A., M.Ed., M.F.A.
Pamela R. Hemphill, B.A., Ph.D.
Perry F. Hoberg, B.F.A., B.S., M.A.
Robert D. McKinney, B.S., M.Ed.
Frances W. Ring, B.S., Ed.M.
Edward B. Stein, B.S., M.F.A.

ASSISTANT PROFESSORS
Billy S. Newman, B.S., M.Ed.
William J. Rarick, B.A., M.F.A.

ART OFFERINGS

Art 516 Painting I
Art 517 Painting II
Art 519 Independent Study in Painting
Art 521 Sculpture I
Art 522 Sculpture II
Art 524 Independent Study in Sculpture
Art 525 Workshop in Casting of Nonferrous Metals
Art 531 Ceramics I
Art 532 Ceramics II
Art 533 Ceramics III
Art 534 Independent Study in Ceramics
Art 551 Art Education in the Elementary School
Art 565 Workshop in Crafts
Art 576 Primitive Art
Art 580 European and U.S. Art
Art 581 The Artist and Society
Art 595 Latin American Art
Art 597 History of Aesthetics and Art Criticism

English

Dr. McKenty, Chairman

Dr. Thomas, Coordinator for Graduate Studies in English

PROFESSORS

Dorothy D. Bailey, B.A., M.A., Ph.D.
Thomas E. Berry, A.B., A.M., Ph.D.
William N. Garrett, A.B., Ph.D.
J. Bernard Haviland, B.A., M.A., Ph.D.
Wayne Hayward, B.A., M.A., Ph.D.
Leah E. Jordan, B.A., M.A., Ph.D.
Ammon G. Kershner Jr., B.A., M.S., A.M,, Ph.D.
Alice B. Markow, A.B., A.M., Ph.D.
David E. McKenty, B.S., M.A., Ph.D.
Katharine D. Newman, B.S., M.A., Ph.D.
Bernard S. Oldsey, B.A., M.A., Ph.D.
S. Keith Taylor, B.A., M.A., Ed.D.
Powell S. Thomas, B.A., A.M., Ph.D.
Robert H. Weiss, A.B., A.M., Ph.D.
Theodora Lee West, B.A., M.A., Ph.D.

ASSOCIATE PROFESSORS

Joseph P. Browne, B.S., M.A.
Joseph Falgie, B.A., M.A., Ph.D.
William D. Fordyce, A.B., A.M.T., A.M., Ph.D.
John T. Kelly, B.S., M.A., Ph.D.
Willie E. Page Jr., A.B., M.A.
Jane G. Smith, B.S., M.Ed., M.L.S.

ASSISTANT PROFESSOR

Lynette F. McGrath, B.A., M.A., Ph.D.

The Department of English presents two degree programs: the Master of Education with a major in English and the Master of Arts with a major in English. The M.Ed. program is designed to provide a sound basis in the realms of English and American literature and language, of professional education, and of general cultural enrichment. The M.A. program provides a sound basis for continued study leading toward a Ph.D. in English and/or American literature; depth of knowledge in British and American literature for teaching in secondary schools, community colleges, and junior colleges; and cultural enrichment for students of British and American literature.

Requirements for the Graduate Record Examination

The Graduate Record Examination is required for both degree programs. Degree candidates must submit satisfactory Graduate Record Examination scores in the verbal, quantitative, and Literature in English examinations* at or before the completion of six credits of graduate work.

* Aptitude Test—morning. Advanced Test (Literature in English)—afternoon.

MASTER OF EDUCATION IN ENGLISH

(34 Semester Hours)

In addition to meeting the general requirements for the master's degree at West Chester, the candidate must:

1. Score satisfactorily in the Graduate Record Examinations (see above) and satisfy departmental requirements for admission to the degree program.
2. Pass with some distinction a written and/or oral comprehensive examination. This examination is offered the second Wednesday of December, April, and July. If a student fails it twice, he must petition the Department of English for the opportunity of attempting it a third and final time.
3. Pursue a prescribed pattern of courses.
4. Take any courses, graduate and/or undergraduate, deemed necessary by the Graduate Coordinator.
5. Satisfy all course and examination requirements of the School of Education.

The M.Ed. curriculum is arranged as follows:

		Semester Hours
I	**Required English Courses**	**6**
	Eng 500 Methods and Materials of Research (Must be taken at or before the completion of 9 graduate credits.)	3
	Eng 501 Modern Techniques for the Teaching of English	3
II	**Area of Concentration**	**18**
	Below are listed six groups of courses under A, B, C, D, E, and F. A minimum of one course from each lettered group must be selected.	
III	**Required Courses in Education**	**10**
	(See Page 58—School of Education)	

COURSES FOR THE M.Ed. PROGRAM

Group A

Eng 502 History of the English Language
(N.B. Required if analogous undergraduate course is lacking.)
Eng 503 Old English Language and Literature
Eng 507 Middle English Language and Literature
Eng 519 Studies in American English
Lit 506 Beowulf

Group B

Lit 511 English Literary Criticism (1800 to Present)
Lit 512 American Literary Criticism (1800 to Present)
Lit 514 American Literary Movements
Lit 515 Comparative Literature
Lit 517 Literary Spokesmen for American Ideas
Lit 525 Biography

Group C

Lit 519 Major Twentieth Century Irish Writers
Lit 520 Nineteenth Century Novel
Lit 521 English Literature to Chaucer
Lit 522 Chaucer
Lit 523 Eighteenth Century Novel
Lit 524 British and Continental Short Story
Lit 526 Tudor Poetry and Prose
Lit 527 Stuart Literature to the Commonwealth
Lit 528 Milton
Lit 529 Victorian Prose
Lit 530 Victorian Poetry
Lit 533 Romantic Prose and Poetry
Lit 539 Eighteenth Century Poetry and Prose
Lit 542 Spenser

Group E

Lit 531 Shakespeare's Predecessors in Drama
Lit 536 Twentieth Century Drama
Lit 540 Restoration and Eighteenth Century Drama
Lit 543 Shakespeare's Comedies and Poems
Lit 544 Shakespeare's Tragedies and Histories
Lit 546 Shakespearean Literary Criticism
Lit 547 Jacobean and Caroline Drama

Group D

Lit 516 Major Twentieth Century American Poets
Lit 532 Hemingway and Faulkner
Lit 534 Twain and James
Lit 535 Twentieth Century American Writers
Lit 537 Emerson and Thoreau
Lit 538 Hawthorne and Melville

Group F

Eng 508 Standard English as a Second Language or Dialect
Eng 690 Seminar in English Literature
Eng 695 Seminar in American Literature
Lit 541 Greek and Roman Literature in Translation
Lit 550 Literature for the Elementary School
Lit 551 Literature for the Secondary School

(The student is advised to investigate offerings in Language, Linguistics, and Speech and Theatre for additional courses that may be selected under advisement for this group.)

MASTER OF ARTS IN ENGLISH
(30 Semester Hours)

In addition to meeting the general requirements for the master's degree at West Chester, the candidate must:

1. Score satisfactorily in the Graduate Record Examinations (see above), and satisfy departmental requirements for admission to the degree program.

2. Pass with some distinction a written and/or oral comprehensive examination in British and American literature. Areas covered by this comprehensive examination include these: Old English, Middle English, Renaissance, Restoration and Eighteenth Century, Nineteenth Century British, Modern British, American Literature to 1890, and Modern American. Since matters such as history of the language, linguistics, genres, modes, critical attitudes, and various influences extend beyond literary ages, students should also prepare themselves for open-end discussion questions.

   This examination is offered the second Wednesday of December, April, and July. If a student fails it twice, he must petition the Department of English for a third and final opportunity to attempt it.

3. Demonstrate ability to read one of the following modern languages: German, French, or Russian. In exceptional cases, under advisement, another foreign language may be substituted. This requirement must be satisfied in advance of the comprehensive examination.

4. Complete a graduate course in British or American history corresponding to his period of particular interest.

5. Pursue a prescribed pattern of courses.

6. Take any courses deemed necessary by the Graduate Coordinator.

The M.A. curriculum is arranged as follows:

		Semester Hours
I	**Area of Concentration**	**24**
	A. **Required**	
	Eng 500 Methods and Materials of Research	3
	(Must be taken at or before the completion of 9 graduate credits.)	
	B. Two courses each from Groups 1 and 2 and one course each from Groups 3, 4, and 5	21
II	**Electives** (English, History, Linguistics, Philosophy, and/or related fields)	**6**

COURSES FOR THE M.A. PROGRAM

Group 1

Eng 502 History of the English Language
Eng 503 Old English Language and Literature
Eng 507 Middle English Language and Literature
Lit 506 Beowulf
Lit 511 English Literary Criticism (1800 to Present)
Lit 512 American Literary Criticism (1800 to Present)
Lit 514 American Literary Movements
Lit 521 English Literature to Chaucer
Lit 525 Biography

Group 2

Lit 519 Major Twentieth Century Irish Writers
Lit 520 Nineteenth Century Novel
Lit 522 Chaucer
Lit 523 Eighteenth Century Novel
Lit 524 British and Continental Short Story
Lit 526 Tudor Poetry and Prose
Lit 527 Stuart Literature to the Commonwealth
Lit 528 Milton
Lit 529 Victorian Prose
Lit 530 Victorian Poetry
Lit 533 Romantic Prose and Poetry
Lit 539 Eighteenth Century Poetry and Prose
Lit 542 Spenser

Group 3

Lit 515 Comparative Literature
Lit 516 Major 20th Century American Poets
Lit 517 Literary Spokesmen for American Ideas
Lit 532 Hemingway and Faulkner
Lit 534 Twain and James
Lit 535 Twentieth Century American Writers
Lit 537 Emerson and Thoreau
Lit 538 Hawthorne and Melville

Group 4

Lit 531 Shakespeare's Predecessors in Drama
Lit 536 Twentieth Century Drama
Lit 540 Restoration and Eighteenth Century Drama
Lit 543 Shakespeare's Comedies and Poems
Lit 544 Shakespeare's Tragedies and Histories
Lit 546 Shakespearean Literary Criticism
Lit 547 Jacobean and Caroline Drama

Group 5

Eng 690 Seminar in English Literature
Eng 695 Seminar in American Literature

Foreign Languages

Dr. Roberts, Chairman
Mr. Lombardi, Graduate Coordinator

French

PROFESSORS
Madelyn Gutwirth, B.A., M.A., Ph.D.
Alfred D. Roberts, B.A., M.A., Ph.D.

ASSOCIATE PROFESSOR
Marianne H. Kulaski, B.A., M.A.

ASSISTANT PROFESSOR
Robert Greene, A.B., A.M.

German

PROFESSOR
Harry W. Pfund, A.B., A.M., Ph.D.
(Part-time)

ASSOCIATE PROFESSOR
Richard A. Schneider, M.A.

ASSISTANT PROFESSORS
Ralph A. Eisenstadt, B.A., M.A.
Alois H. Kulhanek, B.S., M.A.

Latin

PROFESSOR
Walter E. Frieman, Jr., B.S., S.T.B., S.T.M., Th.D.

Spanish

PROFESSORS
Benjamin Nunez, B.A., M.A., Ph.D.
Philip D. Smith, Jr., B.A., M.A., Ph.D.

ASSOCIATE PROFESSORS
Jorge Escorcia, B.A., M.A.
Ronald P. Lombardi, B.S., M.A.
Julia Puerta, B.S., B.A., M.A.

The Department of Foreign Languages offers two degree programs, one leading to the Master of Education in French, Spanish, German, or Latin, and the other to the Master of Arts in those languages.

Requirements for the Graduate Record Examination

The Graduate Record Examination is required for both degree programs. Degree candidates must submit satisfactory scores in the morning and afternoon tests at or before the completion of six credits of graduate work.

MASTER OF EDUCATION IN FRENCH, SPANISH, GERMAN, OR LATIN

(34 Semester Hours)

The candidate for the M.Ed. program must meet the following requirements:

		Semester Hours
I	**Required Courses**	6
	Lan 500 Methods and Materials of Research	3
	Lan 503 Techniques of Foreign Language Teaching	3
II	**Area of Concentration**	18
	Select at least one course each from Groups A, B, C, and D. (Latin majors choose from Groups A and B.)	
III	**Required Courses in Education**	10
	(See Page 58—School of Education)	

MASTER OF ARTS IN FRENCH, SPANISH, GERMAN, OR LATIN

(30 Semester Hours)

The candidate for the M.A. degree with a major in French, Spanish, German, or Latin must meet the requirements shown below:

		Semester Hours
Area of Concentration with Thesis		30
A. **Required Area**		21
Group A—Course 511 in the respective language	3	
Group B—under advisement	6	
Group C—under advisement	6	
Group D—under advisement	6	
(Latin majors choose 21 semester hours from Groups A and B under advisement.)		
B. Thesis (Lan 610)		6
C. Elective Area (in Area of Concentration)		3
or		
Area of Concentration (Non-Thesis)		30
A. Required Area (see A. above)		21
B. Elective Area (in Area of Concentration)		9

The candidate for the M.A. degree must pass a reading examination in a second foreign language or must have taken and passed at least one graduate-level course in a second foreign language.

LANGUAGE (PROFESSIONAL EDUCATION)

Lin 501 Introduction to Linguistics
Lan 502 Second Languages in the Elementary School
Lan 504 Use of Media in Language Teaching
Lan 580 Seminar in Second Language Education
Lan 585 Institute in Second Language Education

FRENCH

Group A

Fre 511	Romance Philology (French)
Fre 512	Explication de Textes
Fre 513	Phonetics
Fre 514	Advanced Grammar and Stylistics
Fre 515	French Civilization
Lan 550	Seminar in Methods and Materials of Research

Group B

Fre 520	Rabelais
Fre 521	Moliere
Fre 522	Voltaire
Fre 523	Rousseau
Fre 524	Balzac
Fre 525	Proust

Group C

Fre 530	French Classical Tragedy
Fre 531	The French Novel (through the Nineteenth Century)
Fre 532	The Twentieth Century French Novel
Fre 533	French Lyric Poetry
Fre 534	The Contemporary French Theater

Group D

Fre 540	Medieval French Literature
Fre 541	French Literature of the Renaissance
Fre 542	Studies in the Seventeenth Century
Fre 543	Studies in the Eighteenth Century
Fre 544	Studies in the Nineteenth Century

GERMAN

Group A

Ger 511	German Philology
Ger 513	Phonetics
Ger 514	Advanced Grammar and Stylistics
Ger 515	German Civilization
Lan 550	Seminar in Methods and Materials of Research

Group B

Ger 520	Goethe
Ger 521	Schiller
Ger 522	Rilke
Ger 523	George
Ger 524	Thomas Mann
Ger 525	Bertolt Brecht
Ger 526	Kafka

Group C

Ger 531	The Twentieth Century German Novel
Ger 532	The Novelle
Ger 533	German Lyric Poetry
Ger 534	German Drama of the Nineteenth Century
Ger 535	German Drama of the Twentieth Century

Group D

Ger 540	German Literature of the Middle Ages
Ger 541	Poetry of the Reformation and the Baroque Period
Ger 542	The Enlightenment and Storm and Stress
Ger 543	The German Romantics
Ger 544	Nineteenth Century German Realism
Ger 545	The German Expressionists

LATIN

Group A

Lat 511	Comparative Grammar and Syntax of Greek and Latin
Lat 512	History of the Latin Language
Lat 514	Advanced Latin Prose Composition and Translation
Lan 550	Seminar in Methods and Materials of Research

Group B

Lat 513	Italic Dialects
Lat 520	Works of Julius Caesar (Advanced Course)
Lat 521	Cicero's Philosophical Essays
Lat 525	Latin Metre and Verse
Lat 526	Greek and Latin Epic
Lat 527	Roman Historiography
Lat 528	Roman Satire
Lat 529	The Latin Novel
Lat 530	Medieval Latin Literature
Lat 531	Latin Epigraphy
Lat 532	Roman Archaeology
Lat 533	Historical Numismatics
Lat 534	Geography of Ancient Greece and Italy

SPANISH

Group A

Spa 510	Advanced Spanish Phonetics
Spa 511	Romance Philology (Spanish)
Spa 512	Advanced Grammar and Stylistics
Spa 514	Spanish Civilization
Lan 550	Seminar in Methods and Materials of Research

Group B

Spa 520	Cervantes
Spa 521	Juan Ruiz, Arcipreste de Hita
Spa 522	Lope de Vega
Spa 523	Galdos
Spa 524	Valera
Spa 525	Unamuno

Group C

Spa 530	Spanish Comedia of the Golden Age
Spa 531	The Spanish Novel before Cervantes
Spa 532	The Picaresque Novel
Spa 533	The Generation of 1898
Spa 534	Spanish Lyric Poetry

Group D

Spa 540	Medieval Spanish Literature
Spa 541	The Renaissance in Spain
Spa 542	Spanish Romanticism
Spa 543	Contemporary Spanish Theater
Spa 544	Masterpieces and Movements in Spanish Literature
Spa 545	The Latin American Novel

Linguistics

Students interested in building up a concentration in linguistics may elect courses from the following list. They should be aware, however, that presently the Graduate Program offers no major in linguistics. For additional information they are advised to consult graduate coordinators in the Departments of English and Foreign Languages.

LINGUISTICS OFFERINGS

Lin 501 Introduction to Linguistics
Lin 502 Descriptive Linguistics
Lin 503 Phonetics and Phonology
Lin 504 Morphology and Syntax
Lin 505 Transformational Grammar
Lin 509 Contrastive Analysis
Lin 523 (also Phi 523) Philosophy of Language
Lin 580 Language and Culture

Philosophy

Dr. Claghorn, Chairman

PROFESSORS
George S. Claghorn, B.A., Ph.D.
Thomas W. Platt, B.A., M.A., Ph.D.
Stanley Riukas, A.B., Ph.B., Th.B., Ph.L., Ph.D.
Frederick R. Struckmeyer, B.A., A.M., Ph.D.

ASSISTANT PROFESSORS
Paul Banyacski, B.A.
W. Stephen Croddy, B.A., M.A., Ph.D.
Paul A. Streveler, B.A., Ph.D.

The Department of Philosophy offers a program leading to the Master of Arts in philosophy. This degree will serve as a foundation for studies leading to a Ph.D. in philosophy or prepare one for positions in industry, government, or college teaching.

Admission to the Program

In addition to meeting general requirements for admission to a degree program at West Chester, applicants must present a minimum of 12 hours of undergraduate phil-

osophy, including courses in history of ancient philosophy, history of modern philosophy, ethics, and logic.

Foreign Language Requirement

Candidates for the M.A. must demonstrate a reading proficiency in French, German, or Spanish.

Final Examination Requirement

A comprehensive, written final examination is required. This will cover four fields: (1) Metaphysics; (2) Logic; (3) Ethics, Aesthetics, Philosophy of Language, Philosophy of Science, or American Philosophy; and (4) Plato, Aquinas, or Kant. For (3) and (4), the student will choose, under advisement, one of the fields listed.

MASTER OF ARTS IN PHILOSOPHY

(30 Semester Hours)

Candidates for the M.A. degree must meet the following requirements:

		Semester Hours
I	Required Courses	9
	Phi 511 Philosophic Concepts	3
	Phi 535 Practical Logic	3
	Phi 540, 541, or 542 Seminar	3
	THESIS PROGRAM	
II	Area of Concentration	9–12
III	Electives (Philosophy or related)	3–6
IV	Phi 610 Thesis	6
	NON-THESIS PROGRAM	
II	Area of Concentration	15–18
III	Electives (Philosophy or related)	3–6

PHILOSOPHY OFFERINGS

Phi 510 Existentialism
Phi 511 Philosophic Concepts
Phi 512 Contemporary Ethical Theorica
Phi 513 History of Aesthetics
Phi 514 Philosophy of Religion
Phi 520 Philosophy of Mind
Phi 521 Philosophy of the Social Sciences
Phi 522 (also Sci 522) Philosophy of Science
Phi 523 (also Lin 523) Philosophy of Language
Phi 528 Colonial American Philosophy
Phi 530 American Pragmatists
Phi 531 Oriental Philosophy
Phi 535 Practical Logic
Phi 540 Plato Seminar
Phi 541 Aquinas Seminar
Phi 542 Kant Seminar

Speech and Theatre

Dr. Morehouse, Chairman

PROFESSORS
Rita V. Griffith, B.A., A.M., Ph.D.
William M. Morehouse, B.S., M.S., Ph.D.

ASSOCIATE PROFESSORS
Jay H. Berkowitz, B.S., M.A.
William F. Cope, B.F.A., M.A.
Frank E. Peterson, B.S., M.A.
Vincent V. Suppan, B.S., M.A.

ASSISTANT PROFESSOR
John L. Eberhart, B.S., M.A.

SPEECH AND THEATRE OFFERINGS

Sph 525 Speech and Communication for Teachers
Sph 543 Advanced Problems in Public Speaking
SpP 544 Survey of Speech Disorders
SpP 550 Language Disorders
SpP 555 Foundations of Research in Speech Pathology
SpP 575 Speech Improvement in the Elementary School
ThA 536 Producing the Television Program (Nondramatic)
ThA 537 Television Program Directing (Dramatic)

School of Education

Harold W. Benda, *Dean*

John A. Lander, *Associate Dean*

Michael F. Bannon, *Associate Dean for Graduate Studies*

Department of Counselor Education

Mr. Swiren, **Acting Chairman**

PROFESSOR

Julius M. Hill, B.S., M.A., Ph.D.

ASSOCIATE PROFESSORS

Joyzelle Clark, B.A., Ed.M.
Ronald L. Gottshall, B.S., M.A.
Saul H. Greenberg, B.S., M.Ed.
William J. Rahn, B.S., M.Ed.
Julian M. Swiren, B.S., M.S.

Department of Elementary Education

Dr. King, **Chairman**
Dr. Ziegler, **Assistant Chairman**

PROFESSORS

Charlotte E. King, B.S., Ed.M., Ed.D.
Mildred E. Ross, B.S., M.S., Ed.D.

ASSOCIATE PROFESSORS

Charlotte M. Good, B.S., M.Ed.
Ethel G. Haas, B.S., M.Ed.
James E. Habecker, A.B., M.Ed.
Robert W. Herres, B.S., M.A.
Carrie C. Kulp, A.B., M.Ed.
Erminio J. Peta, B.S., M.Ed.
Carlos R. Ziegler, A.B., M.Ed., Ed.D.

ASSISTANT PROFESSORS

Nona E. Chern, B.S., M.S.
Edward H. Gibson, B.S., M.Ed.

Department of Instructional Media Education

Dr. Weagley, **Chairman**

PROFESSORS

Chester L. McTavish, B.S., M.S., Ed.D.
Richard L. Strayer, B.S., M.Ed., Ed.D.
Richard P. Weagley, B.S., M.Ed., Ed.D.

ASSOCIATE PROFESSORS

David L. Redmond, B.S., M.S.
Joseph M. Spiecker, B.S., M.S.

ASSISTANT PROFESSOR

Jay P. Steinmetz, B.S., M.Ed.

Department of Secondary Education and Professional Studies

Dr. Ridley, **Chairman**

PROFESSORS

Michael F. Bannon, B.S., M.A., Ed.D.
Harold W. Benda, B.A., M.A., Ed.D.
Mark M. Evans, B.Ph., M.Ed. Ph.D.
John A. Lander, B.S., A.M., Ph.D.
Everett A. Landin, A.B., M.Ed., Ed.D.
Robert S. Means, A.B., M.A., Ph.D.
Walter N. Ridley, A.B., M.A., Ed.D.
George M. Thomas B.S., M.Ed., Ed.D.

ASSOCIATE PROFESSORS

Luther R. Barth, B.S., M.Ed.
Harry H. Deischer, B.S., M.A., M.S., Ed.D.
Richard C. Gleockler, B.S., M.Ed.
Charles W. Good, B.A., M.A.
Kegham A. Mississyan, B.A., M.A., Ph.D.
Reynold D. Paganelli, B.S., M.A., C.A.S.
Lester N. Recktenwald, B.S., M.A.

[Continued]

Educational Research

Dr. Peters, **Coordinator**

PROFESSORS
Martin J. Higgins, B.S., M.A., Ph.D.
Everett A. Landin, A.B., M.Ed., Ed.D.
Ernest L. Peters, A.B., M.A., Ed.D.

Certification Program in Reading

Mr. Rice, Coordinator

ASSOCIATE PROFESSOR
Charles D. Rice, B.S., M.Ed.

ASSISTANT PROFESSOR
Robert A. Hewitt, B.A., M.Ed.

Special Education

Dr. Freeman, **Coordinator**

PROFESSOR
Howard Freeman, B.S., M.A., Ed.D.

ASSOCIATE PROFESSORS
Saul H. Greenberg, B.S., M.Ed.
Donald H. Painting, A.B., M.A., Ph.D. (Part-time)

Urban Education

Mr. Leeds, **Coordinator**

ASSOCIATE PROFESSOR
F. William Leeds, A.B., M.A.

Demonstration School

PRINCIPAL, ASSOCIATE PROFESSOR
Gerald B. Cartright, B.S., M.Ed.

The School of Education, working cooperatively with the total College community, provides knowledge and skills for the teacher and seeks to further develop social, ethical, and professional attitudes necessary for teaching.

Degree programs offered by the School of Education lead to the Master of Science in Educational Research; the Master of Education in Counselor Education, Elementary Education, and Instructional Media Education; and the Master of Education in Secondary Education, with concentrations in 12 academic fields. This last program is given in cooperation with the Schools of Arts and Letters, Sciences and Mathematics, and Social and Behavioral Sciences.

The School of Education also provides course work for teacher certification and offers programs which certify educational media specialists, guidance counselors, and reading specialists. The program in reading was approved during the 1970-71 academic year and is presented for the first time in this 1971-72 catalogue.

Requirements for the programs are given below under the headings of departments or areas. The professional requirements for secondary education majors are found under the heading of the Department of Secondary Education and Professional Studies. Academic concentrations are given under the various departments of the three Schools embracing the arts and sciences. Requirements for the Master of Science in educational research, which the School of Education offers in cooperation with the Bureau of Research and Related Services, appear following the Department of Secondary Education and Professional Studies.

School of Education Offerings for All Curricula

Professional courses given in the School of Education are available to students in all curricula, subject to approval from the student's adviser and the School of Education. For the complete list from which electives may be chosen, see "Education" in Course Descriptions. (Prerequisites shown in the descriptions should be noted.)

Department of Counselor Education

Mr. Swiren, Acting Chairman

The Department of Counselor Education offers a degree-certification program leading to the Master of Education and the Educational Specialist I Certificate for elementary school counselors or secondary school counselors.

A handbook describing the program in detail is available for prospective students, who may obtain copies from the Counselor Education office. Applicants receive a copy during the initial interview with the department chairman.

Application Deadlines

The completed application materials should be received in the Graduate Office at least 60 days prior to the fall and spring registrations and 30 days prior to the first Summer Session. As soon as the materials reach the department chairman, he will arrange with the applicant for an interview.

Criteria for Admission

The applicant must possess a bachelor's degree from an accredited institution and present an undergraduate record showing an overall academic average of at least 2.5 and at least 2.75 in his concentration. The applicant must also have an average of 2.75 in a minimum of nine credits of guidance–related courses in areas of education, psychology, and sociology. The courses may include General Psychology, Educational Psychology, Tests and Measurements, Human Development, and others as determined by an evaluation of the record by the department.

The applicant must obtain satisfactory scores on the morning aptitude test of the Graduate Record Examination and show evidence of personal and professional qualities that indicate a potential for success in the Counselor Education program.

Enrollment in the Program

Upon meeting admission criteria, the student will be accepted for Phase I of the program. During this phase the student will be evaluated for academic achievement and interpersonal relations.

Degree Candidacy

The student successfully completing Phase I and recommended to enter Phase II becomes a degree candidate for the remainder of the program. The student completes more advanced work in areas common to both elementary and secondary counselors and then enters a period of specialized course work and field experience.

Comprehensive Examination

Upon completion of the prescribed work and recommendation of the adviser, the student is eligible for the comprehensive examination.

The Degree

The Master of Education degree will be granted when the student has met the standards established by the Graduate Council and by the Counselor Education Department.

Certification

In order to obtain the Educational Specialist I Certificate, the student must successfully complete the required practicum. This course provides opportunity for the student to work closely with a professional counselor in a public school under the supervision of the director of the practicum at West Chester. The certificate is issued on the basis of the Program Approval status of the Counselor Education program at West Chester as granted by the Pennsylvania Department of Education.

Sequence of Courses

Phase I

1. Psy 501 Introductory Statistics for the Behavioral Sciences (2)
2. EdC 503 Principles and Techniques of Guidance (2)
3. EdF 500 Methods and Materials of Research in Education (2)
4. EdC 567 Group Dynamics (2)
5. EdF 510 Educational Foundations (3)
6. EdC 540 Evaluative Methods in Guidance I (2)

Phase II

1. EdC 541 Evaluative Methods in Guidance II (2)
2. EdC 570 Principles and Techniques of Counseling I (2)
3. EdE 551 Child Development and Behavior I (3)

   or

   EdE 553 Child Development and Behavior II (3)
4. EdC 556 Career Development and Informational Services (2)
5. EdS 569 Adolescent Development and Learning (3)
6. EdC 573 Principles and Techniques of Counseling II (2)

Phase III

1. EdC 568 The Professional Counselor in the Elementary School (3)
2. EdC 580 Field Experiences for the Elementary Counselor (1)

or

1. EdC 569 The Professional Counselor in the Secondary School (3)
2. EdC 581 Field Experiences for the Secondary Counselor (1)

Phase IV Degree Program

1. Elective (3)

Phase IV Degree–Certification Program

1. EdC 590 Practicum in Guidance and Counseling (3)

Department of Elementary Education

Dr. King, Chairman

Dr. Ziegler, Assistant Chairman

The Department of Elementary Education offers the Master of Education degree in elementary education, which is one of the requirements for the Instructional III Certificate. The Department also offers non–degree programs for teachers seeking to extend their certification to include elementary education and for teachers working toward an Instructional II Certificate. (See also "Permanent Certification" in Academic Information.) Students whose certification is *not* in elementary education may, at the discretion of the Department Chairman, be required to take course work beyond the minimum credit-hour requirements for the degree.

Graduate Record Examination

Students admitted to the master's degree program are required to submit scores for the Graduate Record Examination Aptitude Test during their first session (fall, spring, or summer) of enrollment.

Requirements for Admission to Degree Candidacy

1. Acceptable scores for the Graduate Record Examination Aptitude Test must be on file.
2. Within the pre-candidacy period (the first 15 semester hours), the applicant must complete EdE 501 and two additional EdE courses.
3. Within the pre-candidacy period the applicant must maintain an overall average of 2.75 and a minimum average of 3.00 in elementary education.

The Comprehensive Examination

This examination is given in February and July. In order to become eligible for it, the student must:

1. Earn acceptance to degree candidacy.
2. Complete 28 semester hours and all required courses by the end of the fall or spring semester preceding the examination.
3. Maintain an overall average of at least 2.75, and a minimum of 3.00 in elementary education.

Applications for admission to the Comprehensive Examination are available from the Department and must be filed by December 1 for the February examination and May 1 for the July examination.

Candidates who fail the Comprehensive Examination are permitted one re-examination after an interval of not less than one year and not more than two years. Upon a second failure, candidates are automatically dropped from the degree program. This regulation applies to all current degree candidates, regardless of when they were admitted for graduate study.

Dates for the Comprehensive Examination

The February examination is always given on the first Saturday of February; the July examination takes place annually on the second Saturday in July.

Requirements for the Degree

1. Satisfactory completion of the curriculum outlined below and, in unusual instances, of any additional courses which the department may require.
2. An overall grade average of at least 2.75 and a grade average of at least 3.00 in elementary education.
3. Satisfactory performance on the Comprehensive Examination.

MASTER OF EDUCATION IN ELEMENTARY EDUCATION
(30–34 Semester Hours)

		Semester Hours
I	**Required Courses**	**10**
	EdF 500 Methods and Materials of Research in Education (Elementary)	2
	EdE 501 Introduction to Graduate Study in Elementary Education*	2
	EdF 510 Educational Foundations	3
	EdP 550 Advanced Educational Psychology	3

* Required of all elementary education degree students admitted to graduate study after September 1, 1967.

NON-THESIS PROGRAM (34 s.h.) — Semester Hours

II Area of Concentration — **24**

A. For candidates whose baccalaureate degree was in elementary education

Required		8
EdR 514	Reading in the Content Areas	3
EdE 547	Elementary School Curriculum	2
EdE 553	Child Development and Behavior II	3
Electives (to be chosen under advisement)		16
Professional education		6-8
Free electives		8-10

B. For candidates certified to teach but whose undergraduate degree was not in elementary education

Required		19
EdE 505	The Teacher in the Elementary School	2
EdR 510	Foundations of Reading Instruction	3
EdR 514	Reading in the Content Areas	3
EdE 522	Teaching the Communication Skills	2
EdE 530	Social Studies in Elementary Education	2
EdE 547	Elementary School Curriculum	2
EdE 551	Child Development and Behavior I	3
Mat 555	Modern Techniques of Teaching Elementary School Mathematics	2
Electives (to be chosen under advisement)		5

THESIS PROGRAM (30 s.h.)

The Thesis Program is not recommended for candidates whose baccalaureate degree was not in elementary education.

II Area of Concentration — **17**

Required (See A. above)		8
Electives (chosen under advisement)		9

III Research — **3**

EdE 610 Thesis

ELECTIVES

All electives are to be chosen with the approval of the Elementary Education Department and—when they are the offerings of another department—the approval of that department. For elementary education offerings, see Course Descriptions. Recommended professional-education electives offered by other departments are listed below.

Art 551 Art Education in the Elementary School
Bio 591 Independent Study in Biological Science
EdF 504 Middle School Workshop
EdM 508 Instructional Materials in the Elementary School Curriculum
ESS 556 Workshop in Aerospace Science

[Continued]

ESS 571 Astronomy for the Elementary Teacher
HEd 500 Family Life and Sex Education: Workshop
HEd 541 School-Community Health Education Workshop
Lan 502 Second Languages in the Elementary School
Lin 501 Introduction to Linguistics
Lit 550 Literature for the Elementary School
Mat 501 Fundamental Concepts of Mathematics I
Mat 502 Fundamental Concepts of Mathematics II
Mat 530 Geometry for the Elementary Grades
Mat 555 Modern Techniques of Teaching Elementary School Mathematics
Mat 556 Development of the Mathematics Curriculum in the Elementary Grades
Mus 505 Vitalizing Music in the Elementary School
Mus 506 Teaching of Music Appreciation in the Elementary Grades
Mus 507 Music Education in the Elementary School
Mus 524 Keyboard Activities for the Classroom Teacher
PEd 502 Elementary Physical Education Workshop
PEd 572 The Child and Physical Education
PhS 570 Chemistry for the Elementary Teacher
Sci 520 New Trends in the Elementary School Science Curriculum
Sci 523 Instructional Materials in Elementary Science
Sci 595 Elementary School Science Instruction
Sci 596 Workshop in Elementary School Science Instruction
SpP 575 Speech Improvement in the Elementary School

Department of Instructional Media Education

Dr. Weagley, Chairman

Through its Instructional Media program, the School of Education offers two curricula, one leading to the Master of Education and the other to the Educational Media Specialist Certification. It is possible to pursue both programs concurrently.

The degree program prepares the candidate for the position of audio-visual coordinator in elementary or secondary schools as well as for instructional or administrative positions in the audio-visual field in junior colleges. The program also enables persons in business and industry to gain competence in the communications field.

The Master of Education

Students admitted to the master's degree program are required to submit scores for the Graduate Record Examination Aptitude Test during their first session (fall, spring, or summer) of enrollment.

Admission to Degree Candidacy

Upon completion of 15 semester hours, application for degree candidacy may be made by students who meet the following requirements:

1. A 3.00 average in courses in Educational Media.
2. A 2.75 average in overall graduate work.
3. Successful performance on the Graduate Record Examination.
4. Satisfactory performance on a proficiency examination in the field of Educational Media.

The Comprehensive Examination

Admission to the comprehensive examination is gained by meeting the following requirements:

1. Admission to degree candidacy.
2. Completion of all required courses and 28 semester hours of course work.

Degree Requirement

The candidate must perform satisfactorily on the comprehensive examination and satisfactorily complete the curriculum shown below.

MASTER OF EDUCATION IN EDUCATIONAL MEDIA

(Non-Thesis Program — 34 Semester Hours)

		Semester Hours	
I	**Required Courses**		**5**
	EdF 500 Methods and Materials of Research in Education	2	
	EdF 510 Educational Foundations	3	
II	**Area of Concentration**		**24-29**
	A. **Required Courses**	20	

		Semester Hours
EdM 502	Selection and Effective Utilization of Educational Media	2
EdM 511	Programmed Instruction	3
EdM 519	Library Science	2
EdM 520	Designing Instructional Materials	3
EdM 522	Production of Non-Projected and Projected Materials	3
EdM 555	Learning Theories Related to Educational Media	2
EdM 560	Organization and Administration of the Audio-Visual Program	3
EdM 590	Internship Program in Educational Media	2
B. **Electives,** chosen under advisement from the following:		4-9
EdM 501	Orientation to Educational Media	3
EdM 505	The Motion Picture in Education	2
EdM 508	Audio-Visual Materials in the Elementary School Curriculum	2
EdM 509	Audio-Visual Materials in the Secondary School	2
EdM 513	Producing Auto-Instructional Programs	3
EdM 524	Advanced Projectual Production	3
EdM 525	Photography for Teachers	3
EdM 526	Advanced Still Photography	3
EdM 529	Instructional Use of the 8 mm. Motion Picture Camera	3
EdM 530	Cinematography I	3
EdM 531	Cinematography II	3
EdM 533	Television in Education for Teachers	3
EdM 534	Instructional Television Production I	3
EdM 535	Instructional Television Production II	3
EdM 552	History and Philosophy of Educational Media	2
EdM 563	Field Study in Educational Media	3
EdM 565	Seminar in Instructional Materials	2
EdM 591	Seminar in Research in Communications	2
EdM 600	Research Report	2
III Free Electives (under advisement)		**0-5**

EDUCATIONAL MEDIA SPECIALIST CERTIFICATION

In order to obtain this certificate, the student must:

A. Hold a permanent teaching certificate (Instructional II Certificate) valid for elementary or secondary education.

B. Complete, under advisement, the State–approved curriculum, which consists of the course work outlined under **II. Area of Concentration** in the Master of Education in Educational Media program, given above.

C. Achieve an average of 2.75 in the prescribed program.

D. Perform successfully on a final comprehensive examination.

Department of Secondary Education and Professional Studies

Dr. Ridley, Chairman

The Department of Secondary Education and Professional Studies is responsible for the professional courses offered for certification on the secondary level and in the Master of Education degree programs having academic concentrations. This department also offers other professional courses required in all M.Ed. programs—and some courses designed for election by educators and others who wish to develop new insights and/or to strengthen professional skills.

MASTER OF EDUCATION

(Secondary Education—Academic Subject Majors)

The Master of Education program is offered with academic concentrations in English, French, Spanish, German, Latin, biology, chemistry, earth and space science, mathematics, physics, geography, and social science (with emphasis in economics, history, political science, psychology, or sociology-anthropology). This program is offered cooperatively by the School of Education and the Schools of Arts and Letters, Sciences and Mathematics, and Social and Behavioral Sciences. The academic requirements for each concentration are found elsewhere in this Bulletin under the respective department.

This degree affords the student opportunity to strengthen his knowledge of his major subject- matter field, as well as his professional knowledge and competence.

The student earning the degree in this program must be advised both by the department of his subject field and by the Department of Secondary Education and Professional Studies. It is the responsibility of the student to arrange for conferences in both departments in planning his program.

MASTER OF EDUCATION REQUIREMENTS

(Secondary Education—Academic Subject Majors)

(34 Semester Hours)

Semester Hours

I Professional Education Requirements* **10–12**

A. EdF 510 Educational Foundations (3)

B. A minimum of one course from each of the following groups:

Group 1

EdF 520 Comparative Education (3)
EdF 580 Philosophy of Education (3)
EdF 581 History of American Education (3)

Group 2

EdF 509 Contemporary Teaching Trends (2)
EdF 528 Creative Teaching (2)
EdP 550 Advanced Educational Psychology (3)
EdS 524 Supervision of Student Teaching (3)
EdS 569 Adolescent Development and Learning (3)
EdU 501 Curricular Adaptations for the Disadvantaged (3)

Group 3

EdC 567 Group Dynamics (2)
EdF 503 The Emerging Curriculum (3)
EdF 504 Middle School Workshop (4)
EdF 590 School Law (2)
EdS 502 Secondary School Curriculum (2)
EdS 506 The Junior High School (2)
EdU 502 Human Relations in the School and Community (3)

II Subject Matter Concentration **20–22**

A. Methods and Materials of Research (2–3)

B. Academic Subject (18-20)
(See respective academic department for details)

III Elective (Professional or Academic)** **0–4**

Comprehensive Examinations

The student must perform satisfactorily on the final comprehensive examinations covering the subject–matter concentration and the professional–education requirements.

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* Chosen in conference with the adviser in secondary education, according to the needs of the student.

** Chosen in conferences with the secondary education and academic advisers, according to the needs of the student.

COURSES IN SECONDARY EDUCATION AND PROFESSIONAL STUDIES

EdF 500	Methods and Materials of Research in Education
EdS 502	Secondary School Curriculum
EdF 503	The Emerging Curriculum
EdF 504	Middle School Workshop
EdS 506	The Junior High School
EdS 508	The Core Curriculum
EdF 509	Contemporary Teaching Trends
EdF 510	Educational Foundations
EdF 515	Federal and State Role in Education
EdF 520	Comparative Education
EdF 523	Education Behind the Iron Curtain
EdS 524	Supervision of Student Teaching
EdF 525	The Teacher and Administrative Leadership
EdF 528	Creative Teaching
EdP 550	Advanced Educational Psychology
EdS 566	The Activity Program in the Secondary School
EdS 569	Adolescent Development and Learning
EdF 580	History of American Education
EdF 581	Philosophy of Education
EdF 590	School Law

Educational Research

Dr. Peters, Coordinator

The School of Education, in cooperation with the Bureau of Research and Related Services, offers a degree program leading to the Master of Science in educational research. The degree is primarily for individuals who wish to obtain research positions in local school districts. It is also appropriate for research positions in colleges and universities, community colleges, governmental agencies, regional educational laboratories, and industry.

Admission to Degree Program

The applicant will be admitted to the program on the basis of:

1. A minimum over-all average of 2.75 in undergraduate studies and 3.00 in the major field.

2. Graduate Record Examination Aptitude Test.
3. Personal interview with the coordinator of the program.

Any candidate admitted to graduate study, but not admitted to the degree program in educational research, may take courses with permission of the coordinator. There is no guarantee that courses taken by a non-degree student may later be used to satisfy degree requirements for the M.S. in educational research.

Requirements for Admission to Degree Candidacy

Upon completion of 10 semester hours, which must include Psy 501—Introductory Statistics for the Behavioral Sciences and EdF 500—Methods and Materials of Research in Education, the candidate will be advanced to degree candidacy providing he has maintained a minimum average of 3.00 in his graduate work and has passed a qualifying examination.

The Internship

After mastery of the tool courses (Psy 501, EdF 500, Psy 502, and Res 520), the student will serve an internship with an outside agency conducting educational research. During this period he will utilize the skills he has developed to design and conduct a research project under the joint supervision of College and host institution personnel.

The Comprehensive Examination

To be eligible for the comprehensive examination the candidate must:

1. Have completed at least 28 semester hours and all tool courses prior to the semester in which he takes the examination.
2. Have maintained an overall average of at least 3.00.

The candidate must indicate by letter his intention to take the examination. The coordinator should receive this letter within the first 10 days of the semester in which the candidate desires the examination.

Candidates who fail the comprehensive examination are permitted one re-examination after an interval of at least one year but not more than two years.

Requirements for the Degree

1. Satisfactory completion of the curriculum outlined below.
2. An overall average of 3.00 in graduate courses taken in the degree program.
3. Satisfactory performance on the comprehensive examination.
4. Completion of Research Report or Master's Thesis approved by the coordinator.

MASTER OF SCIENCE IN EDUCATIONAL RESEARCH

(34 Semester Hours)

Required Courses

		Semester Hours
Psy 501	Introductory Statistics for the Behavioral Sciences	2
EdF 500	Methods and Materials of Research in Education	2
Psy 502	Advanced Statistics for the Behavioral Sciences	2
Res 520	Research Design	2
EdC 540	Evaluative Methods in Guidance I	2
CSc 501	Introduction to Computer Programming	3
Phi 535	Practical Logic	3
EdF 503	The Emerging Curriculum	3
EdF 510	Educational Foundations	3
EdF 515	Federal and State Role in Education	2
EdP 550	Advanced Educational Psychology	3
Res 592	Internship Program in Educational Research	2
Research Project		2–3
Res 600	Research Report 2	
or		
Res 610	Thesis 3	
Electives (to be chosen under advisement)		2–3

Electives

Electives may be chosen from the offerings of any department, with the approval of the department involved and of the coordinator.

Certification Program in Reading

Mr. Rice, Coordinator

The School of Education offers a program leading to certification as a Reading Specialist. The reading specialist certification endorsement has a scope for grades K–12. The program has accommodations for both elementary and secondary teachers. Special courses and varied activities within courses allow every candidate to acquire a knowledge of and an appreciation for the entire scope, as well as an intensive development within his selected area of interest.

The certification program also accommodates persons holding a master's degree and desiring another area of specialization.

Admission to the Program

In addition to meeting the general admission requirements of the College, the student must achieve satisfactory scores on the aptitude section of the Graduate Record Examination. This examination must be taken within the first 12 hours of study.

Requirements for the Certification

1. Satisfactory completion of the curriculum outlined below and, in unusual instances, of any courses which the Coordinator may deem necessary.
2. An overall grade average of at least 2.75 and the recommendation of the program coordinator.
3. Satisfactory performance on a comprehensive examination.

Students desiring further information about the reading specialization program should communicate with the Coordinator.

CURRICULUM FOR READING SPECIALIST CERTIFICATION

(24–32 Semester Hours)

		Semester Hours
I	**Reading Courses**	**18-24**
	Group 1—Required	**12**
EdR 510	Foundations of Reading Instruction	3
EdR 516	Reading Disabilities	3
EdR 521	Reading Clinic Practicum and Seminar I	3
EdR 522	Reading Clinic Practicum and Seminar II	3
	Group 2—Electives	**6–12**
EdR 514	Reading in the Content Areas: Elementary	3
EdR 515	Reading in the Content Areas: Secondary	3
EdR 523	Reading and Linguistics	2
EdR 540	Seminar in Reading	3
EdR 541	Organization and Supervision of Reading Programs	3
II	**Related Study**	**6–8**
	Group 1—Language Arts	**2–3**
EdE 522	Teaching the Communication Skills	2
EdE 525	Curriculum and Research in the Language Arts	2
EdE 543	Creative Expression in the Elementary School	2
Lin 501	Introduction to Linguistics	3
Lit 550	Literature for the Elementary School	3
	Group 2—Related Areas	**4-6**
EdA 570	The Mentally Atypical Child	2
EdA 571	Childhood Learning Disabilities	2
EdC 503	Principles and Techniques of Guidance	2
EdE 547	Elementary School Curriculum	2
EdE 551	Child Development and Behavior I	3
EdE 553	Child Development and Behavior II	3
EdE 561	Guidance in the Elementary School	3
EdF 525	The Teacher and Administrative Leadership	2
EdF 528	Creative Teaching	2
EdM 501	Orientation to Educational Media	3
EdS 502	Secondary School Curriculum	2
SpP 544	Survey of Speech Disorders	2

Other courses may be selected under advisement and as warranted by the student's program.

Special Education

Dr. Freeman, Coordinator

EdA 537 Developmental Assessment of Children with Learning Problems
EdA 540 Workshop in Special Education
EdA 570 The Mentally Atypical Child
EdA 571 Childhood Learning Disabilities
EdA 572 The Emotionally Disturbed Child

Urban Education

Mr. Leeds, Coordinator

EdU 501 Curricular Adaptations for the Disadvantaged
EdU 502 Human Relations in the School and Community

School of Health and Physical Education

Dr. Youmans, *Dean*

Dr. Norris, *Associate Dean for Graduate Studies*

PROFESSORS

Norman A. Cochran, B.S., M.A., Ed.D.
Edwin B. Cottrell, B.S., M.Ed., Ed.D.
John D. Lemcke, B.S., M.Ed., Ed.D.
Robert Mitten, A.B., M.A., Ed.D.
Edward N. Norris, B.S., M.S., Ed.D.
Neil A. Serpico, B.A., Ed.M., Ed.D.
Russell L. Sturzebecker, B.S., Ed.M., Ed.D.
Edwin L. Youmans, B.A., M.A., Ph.D.

ASSOCIATE PROFESSORS

Alvin B. Davis, B.S., M.A.
Phillip B. Donley, B.S., M.S., Certificate in Physical Therapy
Ralph H. Kapilian, B.S., M.S., Ph.D.
Monita Lank, B.A., M.A., Ph.D.
Melvin M. Lorback, B.S., M.S.
John M. Lowe, Jr., B.S., M.S.
John R. Steinmetz, B.S., M.Ed.
Lloyd C. Wilkinson, B.S., M.A.

The School of Health and Physical Education offers degree programs leading to the Master of Education and Master of Science in health and physical education. The Master of Education enriches academic preparation for teaching in the public schools and prepares the successful candidate for teaching at the college level. The Master of Science is designed primarily to meet the individual needs of the graduate student who wishes to pursue graduate work beyond the master's degree and leading to the doctoral degree. The M.S. degree also prepares personnel to serve as staff in institutions of education, government, and industry.

Communicating with the School

Communications regarding the graduate program in health and physical education should be addressed to the Associate Dean for Graduate Studies, School of Health and Physical Education, West Chester State College, West Chester, Pa. 19380.

The Master of Education Program

Admission to the M.Ed. Program

In addition to meeting the basic requirements of the College, given under Admissions, applicants must present a baccalaureate degree attained in the field of health and physical education.

Admission to M.Ed. Degree Candidacy

Within the 15 semester hours of pre-candidacy, the applicant must complete four of the following five required courses: PEd 500, 530, 550, 561, and HEd 540. His minimum grade-point average for these courses must be 2.75.

Requirements for the M.Ed. Degree

1. Satisfactory completion of the curriculum shown below, with an overall average of 2.75 and an average of 3.00 in health and physical education.
2. Satisfactory performance on the written and/or oral comprehensive examinations.

The Master of Science Program

Admission to the M.S. Program

Applicants must meet the basic requirements of the College, given under Admissions, and must present a baccalaureate degree attained in the field of health and physical education. They must also achieve a combined score of 800 on the Aptitude Section of the Graduate Record Examination.

In addition, at the discretion of the graduate faculty of the School, a screening examination may be required of M.S. candidates.

Admission to M.S. Degree Candidacy

Within the 15 semester hours of the pre-candidacy period, the applicant is expected to complete three of the following four required courses: PEd 500, 530, 550, and Psy 501. His grade-point average for these and other courses taken during pre-candidacy must be at least 3.00.

Requirements for the M.S. Degree

1. Satisfactory completion of the curriculum shown below, with an overall average of 3.00.
2. Oral defense of the thesis.
3. Satisfactory performance on the written and/or oral comprehensive examinations.

MASTER OF EDUCATION IN HEALTH AND PHYSICAL EDUCATION

(34 Semester Hours)

		Semester Hours
Area I		**20**
A. Basic Required		
EdF 510	Educational Foundations	3
PEd 500	Methods and Materials of Research in Health and Physical Education	2
PEd 530	Scientific Bases for Physical Education	3
PEd 550	Historical and Philosophical Bases for Health and Physical Education	3
PEd 561	Techniques of Measurement and Evaluation in Health and Physical Education	3
HEd 540	School Health Problems	3

B. Research Project		Semester Hours
PEd 591	Research Project Seminar I	2
PEd 592	Research Project Seminar II	1

Area II — 6

Selected Required (only one of the two HEd courses may be selected)

PEd 562	Administration and Supervisory Practices in Health, Physical Education, Recreation, and Athletics	3
PEd 570	Curriculum in Health and Physical Education	3
HEd 565	Scientific Bases for Health	3
	or	
HEd 567	Sociological Bases for Health	3

Area III — 8

Electives, chosen from the list below.

ELECTIVES FOR THE M.Ed. PROGRAM IN HEALTH AND PHYSICAL EDUCATION

PEd 502 Elementary Physical Education Workshop
PEd 510 School and Community Recreation
PEd 512 Outdoor Education Workshop
PEd 520 Scientific Principles of Coaching
PEd 531 Adapted Physical Education
PEd 534 Modern Principles of Athletic Training
PEd 551 Seminar in Professional Literature in Health, Physical Education, and Recreation
PEd 560 Contemporary Problems in Health, Physical Education, and Recreation
PEd 562 Administrative and Supervisory Practices in Health, Physical Education, Recreation and Athletics
PEd 563 Scientific Measurement and Instrumentation
PEd 564 Biodynamics of Human Performance
PEd 566 Mechanical Analysis of Motor Skills
PEd 570 Curriculum in Health and Physical Education
PEd 571 Comparative Physical Education
PEd 572 The Child and Physical Education
PEd 573 The Olympic Games — Their Influences on the Ancient and Contemporary Worlds
PEd 580 History and Philosophy of Safety Education and Principles of Accident Prevention
PEd 581 Contemporary Practices and Program Evaluation in Safety Education
PEd 582 Problems in Traffic and Driver Education
PEd 583 Psychology in Safety Education and Accident Prevention
HEd 500 Family Life and Sex Education: Workshop
HEd 541 School-Community Health Education Workshop
HEd 565 Scientific Bases for Health
HEd 567 Sociological Bases for Health

MASTER OF SCIENCE IN HEALTH AND PHYSICAL EDUCATION
(30 Semester Hours)

		Semester Hours
I	**Area of Concentration**	**11**
	PEd 500 Methods and Materials of Research in Health and Physical Education	2
	PEd 530 Scientific Bases for Physical Education	3
	PEd 550 Historical and Philosophical Bases for Health and Physical Education	3
	Psy 501 Introductory Statistics for the Behavioral Sciences	3
II	**Thesis**	**6**
	PEd 593 Seminar	2
	PEd 610 Thesis	4
III	**Electives**	**13**
	A. Electives from either the scientific group or the social and cultural group below, selected under advisement	7-10
	B. Electives in related areas of field, selected under advisement	3-6

ELECTIVES FOR THE M.S. PROGRAM IN HEALTH AND PHYSICAL EDUCATION

SCIENTIFIC GROUP

PEd 520 Scientific Principles of Coaching
PEd 531 Adapted Physical Education
PEd 534 Modern Principles of Athletic Training
PEd 551 Seminar in Professional Literature in Health, Physical Education, and Recreation
PEd 561 Techniques of Measurement and Evaluation in Health and Physical Education
PEd 563 Scientific Measurement and Instrumentation
PEd 564 Biodynamics of Human Performance
PEd 566 Mechanical Analysis of Motor Skills
HEd 565 Scientific Bases for Health

SOCIAL CULTURAL GROUP

PEd 560 Contemporary Problems in Health, Physical Education, and Recreation
PEd 562 Administration and Supervisory Practices in Health, Physical Education, Recreation, and Athletics
PEd 570 Curriculum in Health and Physical Education
PEd 571 Comparative Physical Education
PEd 572 The Child and Physical Education
PEd 573 The Olympic Games — Their Influences on the Ancient and Contemporary Worlds
HEd 500 Family Life and Sex Education: Workshop
HEd 567 Sociological Bases for Health

Service Courses

The following courses are open to all curricula, with no prerequisite in health and physical education required: PEd 502, 510, 512, 520, 541, and HEd 500, 540.

School of Music

Charles A. Sprenkle, *Dean*

Alexander Antonowich, *Associate Dean*

Ira C. Singleton, *Associate Dean for Graduate Studies and Research*

Charles A. Sprenkle, B.Mus., B.S., M.Mus., D.Mus.A.	Dean, Professor
Alexander Antonowich, B.S., M.A., Ed.D.	Associate Dean, Professor
Ira C. Singleton, B.S., Ed.M., Ph.D.	Associate Dean for Graduate Studies and Research, Professor
Lois W. Alt, B.S., B.Mus., M.Mus.	Associate Professor of Voice
Edward A. Barrow, B.Mus., M.Mus.	Associate Professor of Brass
Robert M. Bedford, B.Mus., M.S.	Associate Professor of Piano
Margaretta A. Carey, B.S., M.Mus., Ed.D.	Chairman, Department of Music Education, Professor
Robert L. Carl, B.S., B.Mus., M.Mus.	Assistant Professor of Piano
Paul E. Carson, B.S., M.F.A.	Chairman, Department of Instrumental Music, Associate Professor
Irving H. Cohen, B.A., M.A., Ph.D.	Professor of Music History and Literature
Arnold Fletcher, B.S., Ed.M., Ed.D.	Professor of Piano
Charles D. Gangemi, B.A., M.A.	Associate Professor of Piano
Miriam S. Gottlieb, A.B., M.A.	Associate Professor of Piano
Constantine Johns, B.S., M.A., Ed.D.	Professor of Music History and Literature/Strings
Eugene Klein, B.Mus.Ed., M.Mus.Ed.	Associate Professor of Cello
Fritz K. Krueger, A.B., B.S., B.Mus., B.Mus., M.Mus.	Assistant Professor of Voice
Shirley A. Munger, B.A., M.A., D.Mus.A.	Professor of Music Theory and Composition
Robert E. Pennington, B.Mus., M.Mus., Mus.D.	Professor of Piano
Frederick C. Pflieger, B.S., M.Mus., Ph.D.	Associate Professor of Music Education
Robert D. Schick, B.A., M.A., A.Mus.D.	Professor of Music History and Literature/Piano
Jane E. Sheppard, B.Mus., M.A., M.Mus.	Associate Professor of Vocal and Choral Music
James E. Smith, B.Mus., M.Mus.	Associate Professor of Violin
H. Lee Southall, B.S., M.A.	Assistant Professor of Brass
Roy D. Sweet, B.S., M.Mus.	Chairman, Department of Vocal and Choral Music, Associate Professor
James C. Thomson, A.B., M.A., M.A., Ph.D.	Chairman, Department of Music History and Literature, Professor
Richard K. Velets, B.Mus., M.Mus., D.Mus.	Professor of Piano
Helen E. Wallach, B.Mus., M.Mus.	Associate Professor of Piano
W. Benjamin Whitten, B.Mus., M.Mus.	Chairman, Department of Keyboard Music, Associate Professor
Harry Wilkinson, B.S., Ed.M., Ph.D.	Professor of Music Theory and Composition/Organ
Lois M. Williams, B.Mus., M.A.	Associate Professor of Music History and Literature/Voice and Choral Music
James J. Wright, B.S., Ed.M., Ph.D.	Chairman, Department of Music Theory and Composition, Professor

The School of Music offers degree programs leading to the Master of Education in music education and the Master of Arts in history and literature of music. In the near future, the School plans to introduce programs leading to the Master of Music, subject to approval from the Pennsylvania Department of Education.

The Master of Arts provides concentration in the history and literature of music. Three concentrations will be possible under the proposed Master of Music program: applied music, theory, or composition. The design of each candidate's curriculum will be formulated in close liaison between the adviser and the candidate, with consideration for the latter's musical plans, needs, and abilities.

Admission to Degree Programs in Music

In addition to meeting the basic requirements of the College, given under **Admissions,** applicants for a program leading to a master's degree are considered on the basis of their academic record, interviews which evaluate their prospect for successful work at the graduate level, preliminary tests, and auditions to determine prerequisite competencies.

M.Ed. Applicants

Prior to enrollment, applicants must schedule an interview with the Associate Dean for Graduate Studies.

M.A. Applicants

Prior to enrollment, applicants must schedule an interview with the Chairman of the Department of Music History and Literature and must submit Graduate Record Examination scores for the morning tests and the afternoon test in music history. They must also demonstrate a reading proficiency in one foreign language, preferably German, although French is also suited to this purpose.

M.Mus. Applicants

The following admission requirements must be met:

1. The applicant must possess an appropriate baccalaureate degree which comprises a program equivalent to that provided in the B.Mus. program at West Chester State College.
2. His admission must be approved by the Associate Dean for Graduate Studies of the School of Music and by the chairman of the area in which he will matriculate. The applicant must arrange for interviews with these officials and others they may designate before full admission can be granted. These interviews will be used both to evaluate the student's qualifications and to explain to him the requirements of the program in which he wishes to enroll.
3. The following pre–entrance examinations are required as appropriate to each area:

   Majors in applied music—the applicant must demonstrate performance ability at an advanced level by performing for an audition committee. A list of his

repertoire must be submitted before the audition. (Where distance would impose a heavy burden, an unaltered tape may be submitted as evidence of performing ability; however, an audition may be required following enrollment.)

Majors in theory and/or composition—must demonstrate sufficient pianistic ability to meet the demands of the program.

Majors in composition—must submit prior to the audition original works showing technical facility in composition.

Diagnostic Examinations

Diagnostic examinations in music history and music theory are administered to all applicants by the School of Music and should be taken prior to admission. In cases where this is not possible these examinations must be taken during the first week of classes.

Explanation of Numbering System

Course numbers indicate the area of study in the following manner:

Music	Area of Study
500-504	Core Requirements
505-514	Music Education
515-549	Applied Music
550-554	Pedagogy
555-564	Literature
565-584	History
585-597	Theory
598-610	Research

Degree Requirements

Curricula for the programs are given below.

M.Ed. IN MUSIC EDUCATION
(30–34 Semester Hours)

		Semester Hours
I	**Required Courses**	15
	EdF 510 Educational Foundations — 3	
	Mus 500 Methods and Materials of Research — 3	
	Mus 501 Aspects of Musical Style I — 3	
	Mus 502 Aspects of Musical Style II — 3	
	Mus 510 Current Trends in Music Education — 3	
	THESIS PROGRAM (30 s.h.)	
II	**Area of Concentration**	9
	A. **Required** — 6	
	Section I—Music Education — 2	
	Section II—Applied Music — 4	
	B. **Directed Electives** (chosen under advisement from Sections I-V) — 3	
III	**Research**	6
	Mus 598-599 Research Seminar — 3	
	Mus 610 Thesis — 3	

NON-THESIS PROGRAM (34 s.h.)

			Semester Hours
II	**Area of Concentration**		11
	A. **Required**	6	
	Section I—Music Education	2	
	Section II—Applied Music	4	
	B. **Directed Electives** (chosen under advisement from Sections I-V)	5	
III	**Allowed Electives**		4
	A. Music—Sections I–V	2-4	
	B. Chosen from any curriculum	0-2	
IV	**Research**		4
	Mus 598-599 Research Seminar	3	
	Mus 600 Research Report	1	

MASTER OF MUSIC*
(30 Semester Hours)

APPLIED MUSIC

I	**Required Courses**		6
	Mus 501 Aspects of Musical Style I	3	
	Mus 502 Aspects of Musical Style II	3	
II	**Area of Concentration (given below for each major)**		18
III	**Allowed Electives**		4
	Music—Sections I–V	2	
	Chosen from any curriculum	2	
IV	**Recital (Mus 605)**		2

Piano Major

II	**Area of Concentration**		18
	A. **Required**	16	
	Mus 543-547 Advanced Individual Lessons	10	
	Mus 556 Piano Literature I	2	
	Mus 557 Piano Literature II	2	
	Mus 523 Ensemble **or** Mus 528 Accompanying	2	
	B. **Directed Elective**	2	
	Mus 550 Piano Pedagogy or another course from the area of concentration	2	

Voice Major

II	**Area of Concentration**		18
	A. **Required**	12	
	Mus 543-547 Advanced Individual Lessons	10	
	Mus 523 Ensemble	2	
	B. **Directed Electives**	6	

* Pending Pennsylvania Department of Education approval.

		Semester Hours
1. Vocal		
Mus 531	Opera Workshop	2
Mus 551	Vocal Pedagogy	2
Mus 558	Vocal Literature	2
Mus 575	History of the Opera	2
2. Choral		
Mus 533	Advanced Choral Conducting	2
Mus 559	Choral Literature	2
Mus 579	Music of the Renaissance Period	2
Mus 589	Modal Counterpoint I	2

Instrumental Major

II	**Area of Concentration**		**18**
	A. **Required**	12	
Mus 543-547	Advanced Individual Lessons	10	
Mus 523	Ensemble	2	
	B. **Directed Electives**	6	
Mus 534	Advanced Instrumental Conducting	2	
Mus 535	Advanced Class Lessons in Instruments	2	
Mus 552	Marching Band Techniques and Materials	2	
Mus 555	Instrumental Literature	2	
Mus 560	Woodwind Literature	2	
Mus 561	Brass Literature	2	
Mus 562	String Literature	2	
Mus 585	Advanced Band Arranging	2	

MASTER OF MUSIC*
(30 Semester Hours)
MUSIC THEORY OR COMPOSITION

I	**Required Courses**		6
Mus 501	Aspects of Musical Style I	3	
Mus 502	Aspects of Musical Style II	3	
II	**Area of Concentration (given below for each major)**		16–17
III	**Allowed Electives**		4
Music—Sections I–V		2-4	
Chosen from any curriculum		0-2	
IV	**Research (requirements given below for each major)**		3–4

Theory

II	**Area of Concentration in Theory of Music**		**16**
	A. **Required**	12	
Mus 527	Advanced Keyboard Harmony	2	
Mus 588	Advanced Counterpoint	2	
Mus 589	Modal Counterpoint I	2	
Mus 590	Modal Counterpoint II	2	

* Pending Pennsylvania Department of Education approval.

			Semester Hours
	Mus 591 Advanced Composition I	2	
	Mus 596 Seminar in Music Theory	2	
	B. **Directed Electives**		4
	Mus 554 Pedagogy of Music Theory	2	
	Mus 586 Advanced Orchestration	2	
	Mus 587 Advanced Musical Form	2	
	Mus 594 Twentieth Century Musical Styles	2	
	Mus 595 Electronic Music	2	
IV	**Research**		**4**
	A. Mus 599 Research Seminar	1	
	B. Mus 610 Thesis	3	

Composition

II	**Area of Concentration in Composition**		**17**
	A. **Required**		13
	Mus 586 Advanced Orchestration	2	
	Mus 588 Advanced Counterpoint	2	
	Mus 589 Modal Counterpoint I	2	
	Mus 591 Advanced Composition I	2	
	Mus 592 Advanced Composition II	2	
	Mus 594 Twentieth Century Musical Styles	2	
	Applied Music (under advisement)	1	
	B. **Directed Electives**		4
	Mus 554 Pedagogy of Music Theory	2	
	Mus 587 Advanced Musical Form	2	
	Mus 590 Modal Counterpoint II	2	
	Mus 593 Advanced Composition III	2	
	Mus 595 Electronic Music	2	
	Mus 596 Seminar in Music Theory	2	
IV	**Research**		**3**
	Com 610 Musical Composition	3	

MASTER OF ARTS IN MUSIC
(30 Semester Hours)

HISTORY AND LITERATURE OF MUSIC

I	**Required Courses**		**6**
	Mus 501 Aspects of Musical Style I	3	
	Mus 502 Aspects of Musical Style II	3	
II	**Area of Concentration**		**16**
	A. **Required**		10
	1. Mus 565 Introduction to Research in Music History	2	
	2. Choices from the following	8	
	Mus 578 Music of the Medieval Period 2		
	Mus 579 Music of the Renaissance Period 2		
	Mus 580 Music of the Baroque Period 2		
	Mus 581 The Classical Age in Music 2		

		Semester Hours
	Mus 582 Music in the Romantic Era 2	
	Mus 583 Contemporary Music 2	
	B. **Directed Electives**	6
	Section II—Applied Music 0-2	
	Section IV—History of Music 2-6	
	Foreign Language 0-3	
III	**Allowed Electives**	**4**
	A. Music—Sections I–V	2
	B. Choices from any curriculum	2
IV	**Research**	**4**
	Mus 599 Research Seminar	1
	Mus 610 Thesis	3

ELECTIVE COURSES FOR MUSIC STUDENTS

SECTION I. MUSIC EDUCATION

Mus 507 Music Education in the Elementary School
Mus 508 Music Education in the Secondary School
Mus 509 Music Appreciation in the General Music Program
Mus 510 Current Trends in Music Education
Mus 511 Administration of Public School Music
Mus 550 Piano Pedagogy
Mus 551 Vocal Pedagogy
Mus 552 Marching Band Techniques and Materials
Mus 553 String Pedagogy
Mus 554 Pedagogy of Music Theory

SECTION II. APPLIED MUSIC

Keyboard

Mus 523 Piano Ensemble
Mus 528 Accompanying
Mus 536 Master Class in Piano
Mus 539-42 Piano or Organ Major
Mus 543-47 Advanced Piano or Organ

Vocal

Mus 519 Advanced Choir
Mus 523 Vocal Ensemble
Mus 529 Vocal Diction I
Mus 530 Vocal Diction II
Mus 531-32 Opera Workshop
Mus 533 Advanced Choral Conducting
Mus 536 Master Class in Voice
Mus 539-42 Voice Major
Mus 543-47 Advanced Voice

Instrumental

Mus 517 Workshop in Music History
Mus 519 Advanced Band, Advanced Orchestra, Sinfonietta, or Wind Ensemble
Mus 523 Instrumental Ensemble
Mus 525-26 Class Lessons in Instruments
Mus 534 Advanced Instrumental Conducting
Mus 535 Advanced Class Lessons in Instruments
Mus 536 Master Class in Instruments
Mus 539-42 Instrument Major
Mus 543-47 Advanced Instrument

SECTION III. STRUCTURE AND ORGANIZATION OF MUSIC

Mus 585 Advanced Band Arranging
Mus 586 Advanced Orchestration
Mus 587 Advanced Musical Form
Mus 588 Advanced Counterpoint
Mus 589 Modal Counterpoint I
Mus 590 Modal Counterpoint II
Mus 591 Advanced Composition I
Mus 592 Advanced Composition II
Mus 593 Advanced Composition III
Mus 594 Twentieth Century Musical Styles
Mus 595 Electronic Music
Mus 596 Seminar in Music Theory

SECTION IV. LITERATURE AND HISTORY OF MUSIC

Mus 555 Instrumental Literature
Mus 556 Piano Literature I
Mus 557 Piano Literature II
Mus 558 Vocal Literature
Mus 559 Choral Literature
Mus 560 Woodwind Literature
Mus 561 Brass Literature
Mus 562 String Literature
Mus 565 Introduction to Research in Music History
Mus 569 Special Subjects Seminar
Mus 570 Bach and His Works
Mus 571 History of Instruments
Mus 572 String Chamber Music
Mus 573 History of Chamber Music
Mus 574 History of the Symphony
Mus 575 History of the Opera
Mus 576 History of Music in the United States
Mus 577 Music in Non-Western Civilizations
Mus 578 Music of the Medieval Period
Mus 579 Music of the Renaissance Period
Mus 580 Music of the Baroque Period
Mus 581 The Classical Age in Music
Mus 582 Music in the Romantic Era
Mus 583 Contemporary Music

SECTION V. ELECTIVE COURSES FOR ALL STUDENTS

Mus 515-16 Elementary Chorus, Band, or Orchestra
Mus 537-38 Individual Lessons at the Minor Level in Voice, Piano, Organ, and Instruments
Mus 566 Study and Appreciation of the Opera
Mus 567 Study and Appreciation of the Symphony
Mus 568 Music Criticism and Aesthetics

SECTION VI. SERVICE COURSES IN MUSIC EDUCATION

Mus 505 Vitalizing Music in the Elementary School
Mus 506 Teaching of Music Appreciation in the Elementary Grades

School of Sciences and Mathematics

Russell K. Rickert, *Dean*

Department of Biology
Department of Chemistry
Department of Earth, Space, and General Sciences
Department of Mathematics
Department of Nursing
Department of Physics

Degree Programs Offered:

Master of Education in
- Biology
- Chemistry
- Earth and Space Science
- Mathematics
- Physics

Master of Arts in
- Biology
- Mathematics

Master of Science in
- Chemistry

Biology

Dr. Brown, Chairman

Mr. McDonnell, Coordinator for Graduate Studies

PROFESSORS

Relis B. Brown, A.B., Ph.D.
Carmela L. Cinquina, B.S., M.S., Ph.D.
Thomas DeMott, A.M.E., V.M.D.
John E. C. Dorchester, B.A., M.A., Ph.D.
William R. Overlease, B.S., B.S.F., M.S., Ph.D.
Willard J. Trezise, B.S., M.S., Ph.D.

ASSOCIATE PROFESSORS

Robert W. Bernhardt, B.S., M.S.
Georgann Cullen, B.S., M.A.
James M. McDonnell, A.B., M.A.
Margaret Y. Martinez, A.B., M.A.
Ronald F. Romig, B.S., M.Ed.
William C. Skillen, B.S., M.S.

ASSISTANT PROFESSORS

Harry G. Jones, B.S., M.S.
Richard I. Woodruff, B.S., M.Ed.

The Department of Biology offers two degree programs, one leading to the Master of Education in biology and the other to the Master of Arts in biology.

Admission to the Programs

Applicants for either program must meet the general requirements for admission to degree study at West Chester and, in addition, the following departmental requirements:

1. Scores for the Graduate Record Examination must accompany applications.
2. The names of three references must also accompany applications.

Admission to the M.Ed. Program

Applicants must present a minimum of two semesters of general college chemistry, one semester of organic chemistry, and at least 18 semester hours of biological science.

Admission to the M.A. Program

Applicants must present a minimum of 24 semester hours of biological science, two semesters each of inorganic and organic chemistry, two semesters of physics, and mathematics up to and including calculus.

Degree Candidacy

In addition to fulfilling other requirements, a student applying for degree candidacy must perform satisfactorily on a written examination for which he applies to the coordinator.

Requirements for the M.Ed. Degree

1. Satisfactory completion of the curriculum outlined below.
2. Successful performance on a comprehensive oral examination which may be taken after completion of 28 hours of course work.

Requirements for the M.A. Degree

1. Satisfactory completion of the curriculum outlined below.
2. Successful performance on an oral defense of the thesis or a comprehensive oral examination.
3. Successful demonstration of a reading proficiency in a foreign language acceptable to the department.

MASTER OF EDUCATION IN BIOLOGY
(34 Semester Hours)

		Semester Hours
I	**Professional Education Requirements** (See Page 58—School of Education)	10–12
II	**Area of Concentration**	20–22
	A. Required	
	Sci 500 Methods and Materials of Research	2
	B. Electives, approved by the adviser	18-20
	Chosen from biology courses below and from courses in related areas.	
III	**Electives (Professional or Academic)**	0–4

MASTER OF ARTS IN BIOLOGY
(30 Semester Hours)

I Area of Concentration — 18

Approved courses in biology, under advisement, from offerings shown below.

II A. Thesis (Bio 610) — 6

The thesis should be based on independent laboratory or field observations and should constitute a contribution to existing knowledge in the field. Although publication is not a requirement, the thesis should be in a format acceptable to any standard journal in the field. The candidate will be expected to defend the thesis in an oral examination.

or

B. Seminars in Biology — 6

The candidate will participate in three seminars, each for two semester hours of credit. The seminars will be chosen by the student subject to the approval of his faculty adviser. The content of these seminars will figure prominently in an oral examination taken by the student toward the end of his work for the degree.

Semester Hours

III Electives **6**

The student may elect to take all his graduate courses in the field of biology or he may, under advisement, elect up to 6 credits in related science areas.

COURSE OFFERINGS IN BIOLOGY

Bio 510 History of Biology
Bio 520 Seminar in Cellular Biology
Bio 530 Genetic Theory
Bio 532 Experimental Genetics
Bio 539 Human Heredity
Bio 543 Experimental Embryology
Bio 545 Plant Growth and Development
Bio 547 Growth and Development Seminar
Bio 549 Developmental Anatomy
Bio 550 Seminar in Organismic Biology
Bio 552 Comparative Parasitology
Bio 555 Morphology of Fungi
Bio 556 Advanced Plant Anatomy and Morphology
Bio 557 Insect Morphology
Bio 558 Animal Histology
Bio 560 Seminar in Molecular Biology
Bio 561 Biochemistry I
Bio 562 Biochemistry II
Bio 564 Advanced Bacteriology
Bio 565 Physiology of Fungi
Bio 566 Physiology of Plants
Bio 568 Comparative Physiology and Biochemistry
Bio 570 Seminar in Populational Biology
Bio 572 Applied Ecology
Bio 573 Economic Entomology
Bio 575 Limnology
Bio 576 Plant Pests and Diseases
Bio 577 Animal Ecology
Bio 578 Freshwater Invertebrates
Bio 579 Human Ecology
Bio 580 Experimental Biology
Bio 581 Microtechnique I
Bio 582 Microtechnique II
Bio 585 Systematic Botany
Bio 587 Systematic Zoology
Bio 590 Seminar in Biological Principles
Bio 591 Independent Study in Biological Science
Bio 600 Research Report
Bio 610 Thesis

Courses in Biology for M.Ed. Program Only

Bio 501 Modern Techniques of Teaching Biology
Bio 502 Biochemistry for Teachers
Bio 503 Mammalian Physiology for Teachers
Bio 504 Ecology for Teachers
Bio 505 Field Ecology and Natural History

Chemistry

Dr. Reynolds, Chairman

PROFESSORS

Eleanor W. Ashkenaz, B.S., Ph.D.
Justo B. Bravo, B.S., Ph.D.
Robert W. Medeiros, B.S., M.S., Ph.D.
Francis J. Reynolds, B.S., Ph.D.

ASSOCIATE PROFESSORS

Marc L. Durand, B.S., Ph.D.
Lois L. Gerchman, B.A., M.Ed., M.S.
Michael R. Rachinsky, B.S., Ph.D.
Philip B. Rudnick, B.A., B.A., Ph.D.
Ardis M. Williams, A.B., A.M.

The Department of Chemistry offers programs leading to the Master of Education and the Master of Science in Chemistry.

M.Ed. Program

Admission Requirements

In addition to meeting the general requirements for admission to a degree program at West Chester, applicants must present an undergraduate background including mathematics through calculus and 24 semester hours of undergraduate chemistry.

At the discretion of the department chairman, Graduate Record Examination scores may be required for evaluation and guidance.

Degree Requirements

1. If academic or professional performance is less than satisfactory during the pre–candidacy period, the student may be required to enroll in an appropriate undergraduate course.
2. Successful performance on a comprehensive oral examination given upon completion of the program.
3. Successful completion of the program outlined below.

M.S. Program

Admission Requirements

In addition to meeting the general requirements for a degree program at West Chester, applicants must present an undergraduate background including mathematics through calculus, one semester of analytical chemistry, and full-year courses in organic chemistry and physical chemistry.

Degree Requirements

1. If academic or professional performance is less than satisfactory during the pre–candidacy period, the student may be required to enroll in an appropriate undergraduate course.

2. At the discretion of the department chairman, Graduate Record Examination scores may be required for purposes of evaluation and guidance.
3. A reading proficiency in any one of the following modern languages: German, French, or Russian. The reading test is administered by the Department of Foreign Languages. A demonstrated proficiency in a computer language (FORTRAN, etc.) may be substituted for the above.
4. Successful performance on a comprehensive oral examination. If applicable, this may be based on the area of research represented by the thesis.
5. Successful completion of the program outlined below.

MASTER OF EDUCATION IN CHEMISTRY

(34 Semester Hours)

		Semester Hours
I	**Professional Education Requirements**	**10–12**
	(See Page 58—School of Education)	
II	**Area of Concentration**	**20–22**
	A. Required	14
	Sci 500 Methods and Materials of Research — 2	
	Che 511 Advanced Inorganic Chemistry I — 3	
	Che 521 Advanced Analytical Chemistry — 3	
	Che 531 Organic Reaction Mechanisms — 3	
	Che 541 Physical Chemistry for Teachers — 3	
	[Those who have completed an undergraduate course in physical chemistry take Che 540 in place of Che 541]	
	B. Electives, under advisement	6-8
III	**Electives (Professional or Academic)**	**0–4**

MASTER OF SCIENCE IN CHEMISTRY

(30 Semester Hours)

I	**Area of Concentration**	**9**
	Required Area	
	Che 511 Advanced Inorganic Chemistry I	3
	Che 531 Organic Reaction Mechanisms	3
	Che 545 Chemical Thermodynamics	3

		Semester Hours
II	**Thesis or Non Thesis Option**	**6**
	Che 610 Research and Thesis	6
	or	
	Any two of the following:	
	Che 515 Topics in Inorganic Chemistry	3
	Che 533 Topics in Organic Chemistry	3
	Che 542 Topics in Physical Chemistry	3
	Che 575 Topics in Biochemistry	3
III	**Elective Area**	**15**
	Selected under advisement.	
	Courses in chemistry	12
	Electives from other areas of science or from mathematics	3

ELECTIVES IN CHEMISTRY

Che 501 History and Literature of Chemistry
Che 502 Modern Trends in Teaching Chemistry
Che 512 Advanced Inorganic Chemistry II
Che 513 (also ESS 513) Principles of Geochemistry
Che 515 Topics in Inorganic Chemistry
Che 516 Inorganic Preparations
Che 521 Advanced Analytical Chemistry
[in the M.Ed. program, Che 521 is a required course]
Che 522 Instrumental Methods of Analysis
Che 532 Synthetic Organic Chemistry
Che 533 Topics in Organic Chemistry
Che 535 Qualitative Organic Analysis
Che 536 Polymer Chemistry
Che 540 Advanced Physical Chemistry
Che 542 Topics in Physical Chemistry
Che 545 Chemical Thermodynamics
[in the M.S. program, Che 545 is a required course]
Che 551 Chemistry of Coordination Compounds
Che 561 Nuclear and Radiochemistry
Che 563 Electrochemistry
Che 573 Biochemistry of Proteins and Nucleic Acids
Che 574 Biochemistry of Carbohydrates and Lipids
Che 575 Topics in Biochemistry
Che 591 Seminar
Che 610 Research and Thesis

Earth and Space Science

Dr. Greenberg, Chairman

PROFESSORS

Seymour S. Greenberg, B.S., A.M., Ph.D.
George F. Reed, B.S., M.S., Ed.D.

ASSOCIATE PROFESSORS

Louis A. Casciato, B.S., M.S.
John E. Ehleiter, A.B., M.A.
Hubert E. Harber, B.S., M.B.S., M.A.T.
Paul R. Widick, B.A., M.Ed., M.A.

The Department of Earth, Space, and General Sciences offers a program leading to the Master of Education in Earth and Space Science. The candidate successfully completing the program will have a thorough understanding of the science subject matter, curriculum, and procedures of junior high schools. He will also be well prepared to teach earth and space sciences at any secondary school level. A candidate finishing the program will have qualified for formal certification in earth and space science and also in comprehensive science.

Admission to the Program

In addition to meeting the general requirements for admission to a degree program at West Chester State College, applicants must have achieved certification in one of the following: biology, chemistry, comprehensive science, geography, mathematics, or physics. Regardless of the certification, a student must have the competencies represented by one year of each of the following: college biology, college chemistry, college mathematics, and college physics.

Degree Candidacy

Degree candidacy will be determined by a departmental committee after a student has completed six but before he has completed 15 semester hours of work required for the degree.

Graduate Record Examination

The Graduate Record Examination is not required, but applicants may be asked to submit to a departmental examination that will be used for counseling purposes.

Final Examination

During his final semester of course work, each candidate for the degree must pass a written comprehensive examination that will be administered on one Saturday in

October and one in February. Candidates who do not perform acceptably on the examination may repeat it at a future scheduled time.

All candidates for the degree must satisfactorily present for a faculty committee a seminar on an agreed upon topic.

MASTER OF EDUCATION IN EARTH AND SPACE SCIENCE

(34 Semester Hours)

		Semester Hours
I	**Professional Education Requirements** (See Page 58—School of Education)	**10–12**
II	**Area of Concentration**	**20–22**
	A. Required	14
	Sci 500 Methods and Materials of Research	2
	ESS 510 Principles of Physical Geology	3
	ESS 512 Historical Geology	3
	ESS 550 General Astronomy	3
	ESS 552 Space Science	3
	B. Electives, under advisement	6-8
III	**Electives (Professional or Academic)**	**0–4**

ELECTIVES IN EARTH AND SPACE SCIENCE

ESS 501 Earth Science for Secondary School Teachers
ESS 513 (also Che 513) Principles of Geochemistry
ESS 514 Mineralogy for the Science Teacher
ESS 521 Workshop in Rocks and Minerals
ESS 523 General Geologic Field Studies of S.E. Penna.
ESS 530 Principles of Oceanography
ESS 540 Introduction to Meteorology
PhS 502 Modern Trends in Teaching Physical Science
PhS 506 Seminar in Physical Science
PhS 507 Recent Advances in Physical Science
PhS 590 History of the Physical Sciences
Sci 522 (also Phi 522) Philosophy of Science

ADDITIONAL SCIENCE OFFERINGS FOR ELEMENTARY EDUCATION TEACHERS

ESS 556 Workshop in Aerospace Science
ESS 571 Astronomy for the Elementary Teacher
PhS 570 Chemistry for the Elementary Teacher
Sci 520 New Trends in Elementary School Science Curriculum
Sci 523 Instructional Materials in Elementary Science
Sci 595 Elementary School Science Instruction
Sci 596 Workshop in Elementary School Science Instruction

Mathematics

Dr. Branton, Chairman

PROFESSORS
Richard G. Branton, B.S., M.S., Ph.D.
Judith R. Gumerman, B.A., M.A., Ph.D.
Sebastian S. Koh, B.S., M.A., Ph.D.
Eli M. Mandelbaum, B.A., M.A., Ph.D.
Michael Montemuro, B.A., M.A., Ed.D.

ASSOCIATE PROFESSORS
Thomas J. Ahlborn, B.S., M.A.
Ronald E. Cote, B.A., M.S.
James E. L'heureux, B.S., M.S., Ph.D.
Frank E. Milliman, B.N.S., A.B., A.M
Joseph G. Moser, B.S., M.S.
William H. Seybold, B.S., M.A.
C. Ralph Verno, B.A., B.D., M.S.
Sol Weiss, B.S., M.A.

ASSISTANT PROFESSORS
Thomas Egan, B.S., M.Ed.
Wesley E. Fasnacht, B.S., M.S.
Robert L. Snyder, B.S., M.A.
Mark F. Wiener, B.S., A.M.

The Department of Mathematics offers the Master of Arts degree with options in pure mathematics or mathematics education. The former provides the foundation for continued work in mathematics leading to the Ph.D. degree in pure mathematics. The latter is primarily directed to teachers of mathematics who wish to strengthen their background in mathematics education; in addition, it provides the foundation for the Doctor of Arts or the Ph.D. degree in mathematics education. The department also cooperates with the School of Education in offering the Master of Education degree.

Admission to the Programs

In addition to meeting the basic admission requirements of the College, applicants must fulfill various requirements of the Department of Mathematics, as follow:

Admission to the M.Ed. Program

Prior to enrollment, applicants must schedule an interview with the Department Chairman. Applicants must present a minimum of 24 semester hours of mathematics including a full treatment of calculus and at least one advanced undergraduate course in modern algebra or advanced calculus. Deficiencies in these areas may be removed by successfully completing the undergraduate courses Mat 411—Modern Algebra I or Mat 441—Advanced Calculus I.

Admission to the M.A. Program

Prior to enrollment, applicants must schedule an interview with the Department Chairman. Applicants must present a minimum of 24 semester hours of mathematics including a full treatment of calculus and at least one advanced undergraduate course in modern algebra and one in advanced calculus. Deficiencies in these

areas may be removed by successfully completing Mat 512—Modern Algebra and/or Mat 541—Advanced Calculus I. At the discretion of the department, Graduate Record Examinations may be required.

Requirements for the M.Ed. Degree

1. Satisfactory completion of the curriculum outlined below.
2. Successful performance on a comprehensive oral examination, which may be taken after completion of 28 hours of course work.

Requirements for the M.A. Degree

1. Satisfactory completion of the curriculum outlined below.
2. Successful completion of a comprehensive oral examination given during the candidate's last semester of study.

MASTER OF EDUCATION IN MATHEMATICS
(34 Semester Hours)

		Semester Hours	
I	**Professional Education Requirements** (See Page 58—School of Education)		10–12
II	**Area of Concentration**		20–22
	A. Required	4	
	Mat 500 Methods and Materials of Research in Mathematics Education	2	
	One of the following	2	
	Mat 550 Modern Techniques of Teaching Secondary School Mathematics		
	Mat 551 Teaching Secondary School Mathematics to the Low Achiever		
	Mat 552 Materials for Teaching Secondary School Mathematics		
	B. Electives (under advisement) from the course offerings shown below	16-18	
III	**Electives (Professional or Academic)**		0–4

MASTER OF ARTS IN MATHEMATICS
(30 semester hours)

I	**Core Courses (required of all candidates)**		12
	Mat 515 Algebra I	3	
	Mat 535 Point Set Topology	3	
	Mat 545 Real Analysis I	3	
	Mat 565 Complex Variables I	3	
II	**Required Courses**		9
	A. *Pure Mathematics Option*		
	Mat 516 Algebra II	3	
	Mat 536 Algebraic Topology	3	

Semester Hours

Mat 546 Real Analysis II 3

or

B. *Mathematics Education Option*

A geometry course chosen under advisement 3
Mat 507 Current Trends in Teaching Mathematics 3
One of the following 3
Mat 508 Topics in Mathematics Education
Mat 509 Seminar in Mathematics Education

III Electives **9**

Chosen under advisement from the list of course offerings for degree programs in mathematics. May include six credits for a thesis (Mat 610).

COURSE OFFERINGS FOR DEGREE PROGRAMS IN MATHEMATICS

Mat 503 History of Mathematics*
Mat 505 Theory of Sets*
Mat 512 Modern Algebra*
Mat 513 Linear Algebra
Mat 514 Theory of Numbers
Mat 515 Algebra I
Mat 516 Algebra II
Mat 517 Advanced Topics in Algebra
Mat 523 Mathematical Statistics I
Mat 524 Mathematical Statistics II
Mat 525 Probability and Statistics
Mat 532 Modern Geometry
Mat 533 Projective Geometry
Mat 534 Differential Geometry
Mat 535 Point Set Topology
Mat 536 Algebraic Topology
Mat 537 Advanced Topics in Topology
Mat 541 Advanced Calculus I*
Mat 542 Advanced Calculus II*
Mat 543 Topics in Differential Equations
Mat 545 Real Analysis I
Mat 546 Real Analysis II
Mat 547 Advanced Topics in Analysis
Mat 565 Complex Variables I
Mat 566 Complex Variables II
Mat 571 Operations Research and Applied Mathematics
Mat 590 Seminar in Mathematics
Mat 600 Research Report*
CSc 501 Introduction to Computer Programming
CSc 510 Computer Programming and Numerical Methods

SERVICE COURSES IN MATHEMATICS

Mat 501 Fundamental Concepts of Mathematics I
Mat 502 Fundamental Concepts of Mathematics II
Mat 506 Fundamentals of Mathematics for Physics
Mat 511 Foundations of Algebra
Mat 521 Educational Statistics
Mat 522 Advanced Educational Statistics
Mat 530 Geometry for the Elementary Grades
Mat 531 Foundations of Geometry
Mat 555 Modern Techniques of Teaching Elementary School Mathematics
Mat 556 Development of the Mathematics Curriculum in the Elementary Grades

*Acceptable for degree credit in M.Ed program only.

Physics

Dr. Yarosewick, Chairman

Dr. Shoaf, Coordinator

PROFESSORS

Russell K. Rickert, B.S., M.S., Ed.D.
Mary L. Shoaf, B.A., M.S., Ph.D.

ASSOCIATE PROFESSORS

Robert W. Hawkes, B.S., M.S.
Brent Kaplan, B.M.E., M.M.E.
Harold L. Skelton, B.S., M.S.
Frank A. Smith, B.S., M.A.
Stanley J. Yarosewick, B.S., M.S., Ph.D.

The Department of Physics offers a program leading to the Master of Education in physics. The candidate who successfully completes the program will have a level of competence in physics which will enable him to teach the material with confidence at the high-school and junior-college level.

Admission to the Program

In addition to meeting the general requirements for admission to a degree program at West Chester, applicants must present an undergraduate background including mathematics through calculus (the equivalent of Mat 242 in the West Chester Undergraduate Studies catalogue) and 24 semester hours of undergraduate physics.

At the discretion of the chairman of the department, a proficiency examination may be required of applicants.

Graduate Record Examination

All candidates are required to take the Graduate Record Examination during their last semester before graduation.

MASTER OF EDUCATION IN PHYSICS

(34 Semester Hours)

	Semester Hours
I Professional Education Requirements (See Page 58—School of Education)	**10–12**

Semester Hours

II Area of Concentration 20–22

A. Required 14

Sci 500 Methods and Materials of Research 2

Physics Concentration

Mat 506 Fundamentals of Mathematics for Physics 3

(Phy 515 may be substituted for Mat 506 at the department chairman's discretion.)

Phy 502 Principles of Physics I 3

Phy 503 Principles of Physics II 3

Phy 504 Physics Laboratory 3

B. Electives, under advisement from the list below 6-8

(Supporting electives may also be taken in chemistry and mathematics, as advised.)

Phy 505 Modern Trends in Teaching Physics

Phy 513 Analytical Dynamics

Phy 514 Heat and Thermodynamics

Phy 515 Mathematical Physics I

Phy 516 Mathematical Physics II

Phy 523 Electronics

Phy 532 Nuclear Physics

Phy 533 Nuclear Physics Laboratory

Phy 541 Special Topics in Physics

Phy 591 Seminar

Phy 600 Research

III Electives (Professional or Academic) 0–4

School of Social and Behavioral Sciences

Byron Y. Fleck, *Dean*

Joseph M. Thorson, *Associate Dean*

Robert E. Carlson, *Associate Dean for Graduate Studies*

Department of Business and Economics

Department of Geography

Department of History

Department of Political Science

Department of Psychology

Department of Sociology and Anthropology

Degree Programs Offered:

Master of Arts in History

Master of Education in Geography

Master of Education in Social Science

The School of Social and Behavioral Sciences offers programs leading to the Master of Arts degree in history and, in cooperation with the School of Education, to the Master of Education degree in geography and the Master of Education in social science.

The Graduate Record Examination is required for admission and diagnostic purposes in these three degree programs.

The Master of Education degrees in geography and social science are 34-hour programs with 10 to 12 hours of Professional Education, 20 to 22 hours in Subject Matter Concentration, and 0–4 elective hours in either Subject Matter or Professional Education courses.

MASTER OF ARTS IN HISTORY
(30 Semester Hours)

Dr. Johnson, Chairman, Department of History

PROFESSORS
Robert E. Carlson, B.A., M.A., Ph.D.
Edward G. Everett, B.S., M.A., Ph.D.
Byron Y. Fleck, B.A., M.A., Ph.D.
Claude R. Foster Jr., B.A., M.A., Th.M., Ph.D.
Frank Fox, B.S., M.A., Ph.D.
Patricia C. Johnson, B.A., Ph.D.
Donn C. Riley, A.B., M.A., Ph.D.
Harry G. Schalck, A.B., M.A., Ph.D.
Norbert C. Soldon, B.A., M.A., Ph.D.
Charles H. Stuart, B.A., M.A., Ph.D.
Jane B. Swan, B.A., M.A., Ph.D.
John J. Turner, Jr., A.B., M.A., Ph.D.

ASSOCIATE PROFESSORS
Florence Joseph Crowley, B.A., M.A., Ph.D.
Harold E. Shaffer, A.B., Litt.M.
Robert J. Young, B.S., M.A., Ph.D.

ASSISTANT PROFESSOR
Howard James Burgwin, Jr., B.A., M.A., Ph.D.

The Master of Arts degree in history provides a sound foundation for study leading to the doctorate in history as well as a background of knowledge for teachers in secondary schools and institutions of higher learning and for persons employed in industry and government. The degree also enriches the student's cultural background and helps him to evaluate present events in light of the past.

The M.A. in history may be achieved by completing **either** a thesis or non-thesis program. The candidate in the thesis program must pass a reading-proficiency test in either French or German. The candidate, with the Department Chairman's approval, may substitute another language or may demonstrate competency in statistics. In the non-thesis program, the candidate does not fulfill the language requirement but takes three seminar courses and presents a research paper in each.

	Semester Hours
Required Area	**18**
Major history concentration (American or European — at least two seminars)	12
Minor History concentration (In area not selected for major concentration)	6
Elective Area	
Thesis Option	**12**
His 610 Thesis	6
SSc 500 Methods and Materials of Research	2
Electives, under advisement	4

	Semester Hours
Non-Thesis Option	**12**
SSc 500 Methods and Materials of Research	2
His 550 or His 551	4
[Major-field seminars with research papers]	
His 550 or His 551	2
[Minor-field seminar with research paper]	
Electives under advisement	4

COURSE SELECTIONS

Group I
American

- His 508 Colonial America: 1607-1763
- His 509 Revolutionary America: 1763-1789
- His 511 Rise of the New Nation: 1789-1850
- His 512 Civil War and Reconstruction: 1850-1876
- His 513 Emergence of Modern America: 1876-1919
- His 514 The United States as a World Power: 1919-Present
- His 515 Problems in American Constitutional Development
- His 516 Recent American Diplomatic History
- His 550 Seminar in American History

Group II
European

- His 530 Problems in Medieval Civilization
- His 531 The Renaissance
- His 532 The Reformation
- His 533 Dynastic Europe: 1648-1789
- His 534 The French Revolution and the Napoleonic Era: 1789-1815
- His 535 Nationalism and Democracy: 1815-1914
- His 536 Europe Since 1914
- His 540 The Evolution of Modern Russia
- His 541 Tudor and Stuart England
- His 551 Seminar in European History

Electives

- Eco 531 Comparative Economic Systems
- Eco 532 History of Economic Thought
- Geo 527 Political and Global Concepts in Geography
- Geo 529 Geographic Influences in World History
- His 523 Contemporary World Affairs
- His 524 Studies in the History and Culture of South Asia
- His 525 Studies in the History and Culture of East Asia
- His 527 Studies in the History and Culture of Emerging Africa
- His 590 Independent Studies in History
- PSc 531 Modern Political Theory
- PSc 532 Seminar in International Relations
- PSc 533 The American Legislative Process
- PSc 540 Democracy and Totalitarianism
- Soc 532 Historical Sociology

MASTER OF EDUCATION IN GEOGRAPHY

(34 Semester Hours)

Dr. Keinard, Chairman, Department of Geography

Dr. Langdon, Coordinator for the Graduate Program in Geography

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PROFESSORS
Alvin S. Keinard, B.A., M.Ed., Ed.D.
George Langdon, B.S., M.S., Ph.D.

ASSOCIATE PROFESSORS
Floyd R. Bielski, B.S., M.A.
Charles W. Grassel, B.S., M.S.
Arthur S. Hawthorne, B.S. M.A.
William J. Rampon, B.A., M.A.
John C. Tachovsky, B.S., M.Ed.
Andrew R. Thompson, B.S., M.Ed.

		Semester Hours
I	**Professional Education Requirements** (See Page 58—School of Education)	**10–12**
II	**Subject Matter Concentration**	**20–22**
	Geo 500 Methods and Materials of Geographic Research	2
	Geo 584 Modern Techniques of Teaching Geography	3
	Area of Concentration	15-17
	(A minimum of one course each from Groups 1, 2, 3)	
	Research	0-5
	Geo 610 Thesis	3
	Seminar	2
	Geo 600 Research Report	2
III	**Electives (Professional or Academic)**	**0–4**

GEOGRAPHY OFFERINGS

Group 1. Earth Studies

Geo 501 Advanced Geomorphology
Geo 502 Regional Geomorphology of North America
Geo 503 General Climatology
Geo 504 Climatology of the Continents
Geo 506 Advanced Physical Geography

Group 2. Cultural Studies

Geo 520 Problems of Economic Geography
Geo 521 World Economic Patterns
Geo 522 Agricultural Geography
Geo 524 Geography of Population
Geo 525 Geography of Regional Planning
Geo 526 Urban Geography
Geo 527 Political and Global Concepts in Geography
Geo 529 Geographic Influences in World History
Geo 571 Advanced Conservation of Natural Resources
Geo 572 Seminar in Resource Management

Group 3. Regional Studies

Geo 540 Geography of the United States
Geo 541 Geography of the United States in its World Relations
Geo 542 Geography of Canada
Geo 543 Geography of Mexico and Middle America
Geo 544 Geography of South America
Geo 545 Geography of Europe (Excluding the U.S.S.R.)
Geo 546 Geography of the Soviet Union
Geo 547 Geography of Asia (Excluding the U.S.S.R.)
Geo 549 Geography of Africa

Group 4. Methods, Techniques, and Seminars

Geo 505 Advanced Cartography
Geo 507 Advanced Map Interpretation
Geo 580 Seminar in Geography in Education
Geo 581 Seminar in Modern Philosophy of Geography
Geo 582 Seminar in Geographical Writing and Literature
Geo 585 Geography Field Methods
Geo 587 Geography Workshop for Teachers
Geo 590 Independent Studies in Geography
Geo 591-593 Area Field Studies

MASTER OF EDUCATION IN SOCIAL SCIENCE

(34 Semester Hours)

The student concentrates in economics, history, political science, psychology, or sociology-anthropology, depending upon his teaching field in the secondary school.

CONCENTRATION: ECONOMICS

Dr. Thorson, Chairman, Department of Business and Economics

PROFESSORS
Eugene W. Schooler, B.S., M.B.A., A.M., Ph.D.
Joseph M. Thorson, B.A., L.L.M., M.A., Ph.D.

ASSOCIATE PROFESSORS
Andrew W. Green, B.S., L.L.B., M.B.A., Ph.D.
Ahmad H. Shamseddine, B.A., M.A., Ph.D.

		Semester Hours
I	**Professional Education Requirements**	**10–12**
	(See Page 58—School of Education)	
II	**Subject Matter Concentration**	**20–22**
	SSc 500 Methods and Materials of Research in the Social Sciences	2
	Teaching Field Courses	15-18
	Research	2-3
	SSc 600 Research Report — 2	
	SSc 610 Thesis — 3	
III	**Electives (Professional or Academic)**	**0–4**

ECONOMICS OFFERINGS

Eco 530 Economics and Public Policy
Eco 531 Comparative Economic Systems
Eco 532 History of Economic Thought
Eco 533 Teaching Economics in Secondary Schools
Eco 534 Economics of Developing Areas
Eco 535 The Soviet Economic Community
Eco 550 Seminar in Economics
Eco 590 Independent Studies in Economics

CONCENTRATION: HISTORY

Dr. Johnson, Chairman, Department of History

PROFESSORS

Robert E. Carlson, B.A., M.A., Ph.D.
Edward G. Everett, B.S., M.A., Ph.D.
Byron Y. Fleck, B.A., M.A., Ph.D.
Claude R. Foster Jr., B.A., M.A., Th.M., Ph.D.
Frank Fox, B.S., M.A., Ph.D.
Patricia C. Johnson, B.A., Ph.D.
Donn C. Riley, A.B., M.A., Ph.D.
Harry G. Schalck, A.B., M.A., Ph.D.
Norbert C. Soldon, B.A., M.A., Ph.D.
Charles H. Stuart, B.A., M.A., Ph.D.
Jane B. Swan, B.A., M.A., Ph.D.
John J. Turner, Jr., A.B., M.A., Ph.D.

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Harold E. Shaffer, A.B., Litt.M.
Robert J. Young, B.S., M.A., Ph.D.

ASSISTANT PROFESSOR

Howard James Burgwin, Jr., B.A., M.A., Ph.D.

		Semester Hours
I	**Professional Education Requirements** (See Page 58—School of Education)	**10–12**
II	**Subject Matter Concentration**	**20–22**
	SSc 500 Methods and Materials of Research in the Social Sciences	2
	Teaching Field Courses, Groups 1, 2, or 3	18-20
	Research	0-3
	SSc 600 Research Report 2	
	(His 550 or 551 may substitute for SSc 600)	
	SSc 610 Thesis 3	
III	**Electives (Professional or Academic)**	**0-4**

HISTORY OFFERINGS

Group 1. American History

His 508 Colonial America: 1607-1763
His 509 Revolutionary America: 1763-1789
His 511 The Rise of the New Nation: 1789-1850
His 512 Civil War and Reconstruction: 1850-1876
His 513 Emergence of Modern America: 1876-1919
His 514 United States as a World Power: 1919-present
His 515 Problems in American Constitutional Development
His 516 Recent American Diplomatic History
His 550 Seminar in American History

Group 2. European History

His 530 Problems in Medieval Civilization
His 531 The Renaissance
His 532 The Reformation
His 533 Dynastic Europe: 1648-1789
His 534 The French Revolution and the Napoleonic Era: 1789-1815
His 535 Nationalism and Democracy: 1815-1914
His 536 Europe Since 1914
His 540 The Evolution of Modern Russia
His 541 Tudor and Stuart England
His 551 Seminar in European History

Group 3. World Cultures

His 523 Contemporary World Affairs
His 524 Studies in the History and Culture of South Asia
His 525 Studies in the History and Culture of East Asia
His 526 Workshop in World Cultures
His 527 Studies in the History and Culture of Emerging Africa

Special Studies

SSc 502 Methods and Materials for Teaching Social Studies
SSc 550 Seminar in Contemporary European Culture (Student European Tour)
His 590 Independent Studies in History

CONCENTRATION: POLITICAL SCIENCE

Dr. Harding, Chairman, Department of Political Science

PROFESSOR
Clifford H. Harding, A.B., M.A., Ph.D.

ASSOCIATE PROFESSORS
Thomas J. Brady, B.S., J.D.
William F. Burns, B.A., M.A.
A. Wayne Burton, B.A., M.A.
David S. Eldredge, B.A., A.M.T., C.A.S.
James S. Milne, B.S., M.A.
John C. Shea, B.A., M.A., Ph.D.

		Semester Hours
I	**Professional Education Requirements** (See Page 58—School of Education)	**10–12**
II	**Subject Matter Concentration**	**20–22**

	Semester Hours
SSc 500 Methods and Materials of Research in the Social Sciences	2
Teaching Field Courses	15-18
Research	2-3
SSc 600 Research Report	2
SSc 610 Thesis	3

III Electives (Professional or Academic) 0–4

POLITICAL SCIENCE OFFERINGS

PSc 531 Modern Political Theory
PSc 532 Seminar in International Relations
PSc 533 The American Legislative Process
PSc 540 Democracy and Totalitarianism
PSc 550 Seminar in Political Science
PSc 590 Independent Studies in Political Science

CONCENTRATION: PSYCHOLOGY

Dr. Clark, Chairman, Department of Psychology

PROFESSORS
Jay L. Clark, B.A., M.A., Ph.D.
Ruth C. Feldman, B.A., M.A., M.S.S., Ed.D.
Catherine E. Gregg, B.A., M.A., Ph.D.
Martin J. Higgins, B.S., M.A., Ph.D.

ASSOCIATE PROFESSORS
Elise Bartholomew, B.A., M.A., Ph.D.
Roberta Milgram, B.A., B.J.Ed., M.A., Ed.D.
Jack Porter, B.S., M.Ed., Ed.D.
Harold R. Sands, B.A., M.Ed., Ph.D.
Robert R. Shinehouse, B.S., M.A.

ASSISTANT PROFESSOR
Walena C. Morse, A.B., M.A., Ph.D.

	Semester Hours
I Professional Education Requirements	**10–12**
(See Page 58—School of Education)	
II Subject Matter Concentration	**20–22**
SSc 500 Methods and Materials of Research in the Social Sciences	2
Teaching Field Courses	15-18
Research	2-3
SSc 600 Research Report	2
SSc 610 Thesis	3
III Electives (Professional or Academic)	**0–4**

PSYCHOLOGY OFFERINGS

Psy 501 Introductory Statistics for the Behavioral Sciences
Psy 502 Advanced Statistics for the Behavioral Sciences
Psy 505 Advanced General Psychology
Psy 550 Seminar in Psychology
Psy 552 Seminar in Human Development and Behavior: Adolescence
Psy 554 Seminar: Adolescent Case Studies
Psy 557 Psychology of Adjustment
Psy 562 Psychology of Personality
Psy 563 Mental Hygiene
Psy 590 Independent Studies in Psychology

CONCENTRATION: SOCIOLOGY-ANTHROPOLOGY

Dr. Samuelson, Chairman, Department of Sociology and Anthropology

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PROFESSOR
Glenn W. Samuelson, B.A., M.A.R., M.A., Ed.D.

ASSISTANT PROFESSOR
Harold Bram, B.A., M.A.

ASSOCIATE PROFESSORS
Marshall J. Becker, B.A., M.A., Ph.D.
Robert T. Constable, A.B., M.S.W., D.S.W.

		Semester Hours
I	**Professional Education Requirements** (See Page 58—School of Education)	**10–12**
II	**Subject Matter Concentration)**	**20–22**
	SSc 500 Methods and Materials of Research in the Social Sciences	2
	Teaching Field Courses	15-18
	Research	2-3
	SSc 600 Research Report — 2	
	SSc 610 Thesis — 3	
III	**Electives (Professional or Academic)**	**0–4**

SOCIOLOGY-ANTHROPOLOGY OFFERINGS

Soc 531 Social Pathology
Soc 532 Historical Sociology
Soc 533 American Minorities
Soc 550 Seminar in Sociology
Soc 590 Independent Studies in Sociology
Ant 530 Problems in Anthropology
Ant 540 Ethnographic Studies
Ant 550 Seminar in Anthropology
Ant 590 Independent Studies in Anthropology

COURSE DESCRIPTIONS

ANTHROPOLOGY See Sociology and Anthropology

Art

(Open to All Curricula)

Art 516 **Painting I (3)**

Individual expression in painting and compositional elements are considered. Experimentation is encouraged and is vital to the course.

Art 517 **Painting II (3)**

Painting concepts and problems in various painting media. Developing techniques in cold wax, encaustic, and casein.

Art 519 **Independent study in painting (3-12)**

Independent study in a selected area of painting, terminating in an exhibit.

Art 521 **Sculpture I (3)**

Individual creative expression stressed in three-dimensional design. Students work in wood, clay, plaster, certain metals, and other media.

Art 522 **Sculpture II (3)**

Further exploration of sculptural elements, using clay, plaster, metal, plastics, and found objects. The meaning and direction of additive sculpture.

Art 524 **Independent study in sculpture (3-12)**

Independent study in a selected area of sculpture, terminating in an exhibit.

Art 525 **Workshop in casting of nonferrous metals (3)**

The workshop explores materials, tools, and techniques used in casting nonferrous materials: bronzes, brass, copper, lead, and plastics.

Art 531 **Ceramics I (3)**

Materials, techniques, and processes, learned through experimentation with the plastic character of clay. Clay bodies, glazes, textures, and kiln firing. Design is treated as an outgrowth of the ceramic process.

Art 532 **Ceramics II (3)**
Study in the formulation of structural bodies and decorative techniques at various firing temperatures.

Art 533 **Ceramics III (3)**
An in-depth study into one facet of ceramics. Areas of study include a technical and a laboratory performance.

Art 534 **Independent study in ceramics (3-12)**
Independent study in a selected area of ceramics, terminating in an exhibit.

Art 551 **Art education in the elementary school (3)**
(For Elementary Education Majors)
Curriculum, methods, and materials for teaching art in the elementary school. Contemporary philosophy of art education.

Art 565 **Workshop in crafts (3)**
Explores materials and techniques used in enameling, jewelry (including casting), batik, and mosaic.

Art 576 **Primitive art (3)**
Ritual and myth considered from prehistory to early Ancient Near East; contemporary primitive cultures; psychological and psychoanalytical interpretations; comparison of phenomenon of primitivistic interests of the West.

Art 580 **European and U.S. art (3)**
Suggested for those deficient in art history who wish to augment related fields (i.e., social sciences, literature, philosophy). Analysis of major forms and styles, from Renaissance to the present, in context of social change.

Art 581 **The artist and society (3)**
Personal statement of the student's commitment to art. The nature of the creative impulse; the necessity to society of creative production.

Art 595 **Latin American art (3)**
Interpretation of 20th century environmental architectural and decorative forms as a forerunner of general breakthrough in cultural development in Latin America.

Art 597 **History of aesthetics and art criticism (3)**
Philosophical theories of art production from Greeks through 19th century. Relationship of aesthetic experience to form and to technical, psychological, and cultural values.

Biology

Bio 501 **Modern techniques of teaching biology (3)**
Recent methods for teaching biology. Changing emphasis on the various levels of biological organization; preparation for and presentation of laboratory experience.

Bio 502 **Biochemistry for teachers (3)**
Background for teaching biology in the secondary school. Elements of organic chemistry, solutions, buffers, enzyme action, the structure and metabolism of biological compounds. Some illustrative laboratory exercises. **Prerequisite:** college biology.

Bio 503 **Mammalian physiology for teachers (3)**
Fundamental physiological processes in mammals. **Prerequisite:** college biology.

Bio 504 **Ecology for teachers (3)**
Ecological concepts and information important for biology teachers. **Prerequisite:** college biology or permission of instructor.

Bio 505 **Field ecology and natural history (3)**
Field work in ecology and natural history for the teacher. Basic environmental processes and concepts. Lectures and demonstrations included. **Prerequisite:** permission of department.

Bio 510 **History of biology (3)**
Development of biology from the earliest records. **Prerequisite**: general zoology, general botany.

Bio 520 **Seminar in cellular biology (2)**
Oral and written reports on topics drawn from such areas as cellular physiology, cytology, genetics, histology, and microbiology. **Prerequisite:** permission of department.

Bio 530 **Genetic theory (3)**
Theory of mutation of genes; chromosomal mappings; chromosomal abnormalities; principles of dominance and recessiveness; multiple factors; lethal factors; the nature of DNA. **Prerequisite:** college biology or general zoology and general botany.

Bio 532 **Experimental genetics (3)**
Inheritance from the viewpoint of cellular biology; modern concepts of the structure and chemistry of chromosomes; nature of genes. **Prerequisite:** Bio 530, permission of instructor.

Bio 539 **Human heredity (3)**
The innate qualities of human beings and the genetic basis for these qualities. **Prerequisite:** general genetics or permission of instructor.

Bio 543 **Experimental embryology (3)**
A laboratory course designed to introduce the student to experimental embryology. **Prerequisite:** embryology and organic chemistry, or permission of instructor.

Bio 545 **Plant growth and development (3)**
Factors controlling plant growth and development, against a background of plant physiology. **Prerequisite:** college botany, general chemistry, or permission of instructor.

Bio 547 **Growth and development seminar (3)**
A survey of current research areas in developmental biology. **Prerequisite:** embryology and organic chemistry, or permission of instructor.

Bio 549 **Developmental anatomy (3)**
Anatomy of human reproductive systems and fundamentals of human development. **Prerequisite:** a background in anatomy, physiology, embryology.

Bio 550 **Seminar in organismic biology (2)**
Oral and written reports on topics drawn from such areas as development, morphology, physiology, systematics, and particular groups of organisms. **Prerequisite:** permission of department.

Bio 552 **Comparative parasitology (3)**
Morphology and life cycles of the important parasites of man and animals; epidemiology, pathogenesis, and methods of treatment and control. Two hours lecture and three hours lab. **Prerequisite:** college biology or zoology.

Bio 555 **Morphology of fungi (3)**
Form and structure of fungi, considered against a background of fungal taxonomy. **Prerequisite:** college botany or permission of instructor.

Bio 556 **Advanced plant anatomy and morphology (3)**
Macroscopic and microscopic structure of plants and plant parts. **Prerequisite:** college botany or permission of instructor.

Bio 557 **Insect morphology (3)**
Structure of insects; variations of form in the principal orders. **Prerequisite:** college biology.

Bio 558 **Animal histology (3)**
Structure and function of animal tissues and organs. **Prerequisite:** college biology or zoology.

Bio 560 **Seminar in molecular biology (2)**
Oral and written reports on topics drawn from such areas as biochemistry, biophysics, and microbiology. **Prerequisite:** permission of department.

Bio 561 **Biochemistry I (3)**
Chemistry of carbohydrates, fats, proteins, and phosphorus compounds. **Prerequisite:** inorganic chemistry, one semester of organic chemistry.

Bio 562 **Biochemistry II (3)**
Continuation of Bio 561: bioenergetics; enzymology; metabolism of carbohydrates, fats, proteins. **Prerequisite:** Bio 561 or equivalent.

Bio 564 **Advanced bacteriology (3)**
Bacteriological structure and metabolism with emphasis upon laboratory techniques. Advances as described in current literature. **Prerequisite:** bacteriology, organic chemistry.

Bio 565 **Physiology of fungi (3)**
Physiological activities of fungi. **Prerequisite:** college botany, organic chemistry, or permission of instructor.

Bio 566 **Physiology of plants (3)**
Plant-cell physiology including respiration, photosynthesis, enzyme catalysis, auxins, membrane phenomena. **Prerequisite:** college botany, organic chemistry.

Bio 568 **Comparative physiology and biochemistry (3)**
Comparative physiology and related biochemistry of selected classes of vertebrates. **Prerequisite:** organic chemistry, general or mammalian physiology, or permission of instructor.

Bio 570 **Seminar in populational biology (2)**
Oral and written reports on topics drawn from such areas as biogeography, ecology, evolution, and natural history. **Prerequisite:** permission of department.

Bio 572 **Applied ecology (3)**
Principles of ecology applied in the practice of resource management. Areas covered include: forestry, wildlife management, park management, agricultural planning, urban planning. **Prerequisite:** Bio 504 or equivalent.

Bio 573 **Economic entomology (3)**
Beneficial and deleterious influences exerted by insects upon man's welfare. **Prerequisite:** college biology.

Bio 575 **Limnology (3)**
Physical, chemical, and geological features of the freshwater environment in the biology of freshwater algae. **Prerequisite:** college botany, general ecology.

Bio 576 **Plant pests and diseases (3)**
Parasitism and pathogenic activity of organisms which produce infectious diseases of turf, agricultural crops, ornamental plantings, and flowers. **Prerequisite:** college botany or permission of instructor.

Bio 577 **Animal ecology (3)**
Interrelationships of organisms and the environment, including physical and biological factors. **Prerequisite:** general zoology or college biology.

Bio 578 **Freshwater invertebrates (3)**
Morphology, taxonomy, and bionomics of our local freshwater invertebrates. **Prerequisite:** college biology.

Bio 579 **Human ecology (3)**
The urban ecosystem, approached through a study of the major biotic and abiotic components of a local urban community. Problems of urban and regional planning and action. **Prerequisite:** college biology, ecology, or permission of instructor.

Bio 580 **Experimental biology (3)**
A lecture and laboratory course designed to give the student insight into the experimental approach to biology. Discussions and illustrative laboratory exercises include such topics as: measurement, instrumentation, and experimental design. **Prerequisite:** a completed concentration in biological science.

Bio 581 **Microtechnique I (3)**
Modern histological and histochemical techniques. **Prerequisite:** college biology and organic chemistry, or permission of instructor.

Bio 582 **Microtechnique II (3)**
Continuation of Bio 581. **Prerequisite:** Bio 581 or permission of instructor.

Bio 585 **Systematic botany (3)**
Concepts and principles of taxonomy and biosystematics. Selected plant families from tropical and temperate zones. Each student develops proficiency in the use of a modern flora and knowledge of the common species of one spring flora of Chester County. **Prerequisite:** college botany or permission of instructor.

Bio 587 **Systematic zoology (3)**
Principles and procedures governing the classification of animals. **Prerequisite:** college biology.

Bio 590 **Seminar in biological principles (2)**
Presentation of written and oral reports on topics of current interest in biology. **Prerequisite:** permission of department.

Bio 591 **Independent study in biological science (1-3)**
Proposed research project must be approved by the supervising faculty member prior to registration.

Bio 600 **Research report (1-3)**

Bio 610 **Thesis (3 or 6)**

Chemistry

Note: **Unless prerequisites are specifically given, the following are prerequisite to all courses listed below: 1 year each of undergraduate general chemistry, organic chemistry, analytical chemistry, and physical chemistry.**

Che 501 **History and literature of chemistry (2)**
Development of chemical theories; rise of the experimental method; impact of major chemical discoveries on modern man. Use of published materials in chemical work. Library techniques; methods of information retrieval.

Che 502 **Modern trends in teaching chemistry (2)**
An introduction to current research in chemical education. New curricula and tools for teaching including audio-tutorial and programmed instruction.

Che 511 **Advanced inorganic chemistry I (3)**
Structure and properties of the elements and their compounds from a theoretical point of view; horizontal, vertical, and diagonal relationships in the periodic table.

Che 512 **Advanced inorganic chemistry II (3)**
A continuation of Che 511 with emphasis on the preparation and properties of the lanthanides, actinides, and other transition elements. **Prerequisite:** Che 511.

Che 513 **Principles of geochemistry [also ESS 513] (3)**
Migration and distribution of the chemical elements within the earth; chemistry of the lithosphere, atmosphere, hydrosphere, and biosphere; chemical changes throughout earth history; the geochemical cycle.

Che 515 **Topics in inorganic chemistry (3)**
Special topics of current interest in inorganic chemistry. Topic to be announced prior to registration for the course.

Che 516 **Inorganic preparations (2)**
A laboratory course in advanced techniques for the synthesis of inorganic compounds. (Formerly Che 515.)

Che 521 **Advanced analytical chemistry (3)**
Analytical methods and techniques; theory and application of chemical instrumentation.

Che 522 **Instrumental methods of analysis (3)**
Theory and application of modern instrumentation in analytical chemistry; laboratory work included.

Che 531 **Organic reaction mechanisms (3)**
Theoretical treatment of selected organic reactions. Emphasis on bonding theory, structural relationships, equilibria, and free-energy relationships.

Che 532 **Synthetic organic chemistry (3)**
Discussion of selected topics in synthetic organic chemistry.

Che 533 **Topics in organic chemistry (3)**
Special topics of current interest in organic chemistry. Topic to be announced prior to registration for the course.

Che 535 **Qualitative organic analysis (3)**
Identification of pure organic compounds and mixtures of organic compounds, using classical and modern instrumental techniques. Laboratory included.

Che 536 **Polymer chemistry (3)**
Polymerization kinetics, rheology of polymer melts, crystallization parameters, and monomer reactivity in copolymerization.

Che 540 **Advanced physical chemistry (3)**
Thermodynamics of solutions, kinetics of reactions, and the relationship of molecular structure to physical properties.

Che 541 **Physical chemistry for teachers (3)**
Designed for chemistry teachers who have had no background in physical chemistry. Includes chemical thermodynamics, chemical kinetics, electrochemistry, and chemical equilibrium. **Prerequisite:** integral calculus, general chemistry, general physics.

Che 542 **Topics in physical chemistry (3)**
Special topics of current interest in physical chemistry. Topic to be announced prior to registration for the course.

Che 545 **Chemical thermodynamics (3)**
Laws and functions of thermodynamics and their applications: introduction to statistical thermodynamics.

Che 551 **Chemistry of coordination compounds (3)**
Principles of complex formation; application of the crystal field theory, various complexing agents, and chemical implications of coordinated compounds. **Prerequisite:** Che 511.

Che 561 **Nuclear and radiochemistry (3)**
Nuclear reactions, emissions of various particles, radio chemical applications.

Che 563 **Electrochemistry (3)**
Principles of electrochemical systems and galvanic cells; electrolytic applications in instrumentation and research. **Prerequisite:** Che 511.

Che 573 **Biochemistry of proteins and nucleic acids (3)**
Molecular biology, physico-chemical methods for bio-macromolecules, enzymes, and the molecular basis for physiological phenomena.

Che 574 **Biochemistry of carbohydrates and lipids (3)**
The chemistry of carbohydrates and lipids. Intermediary metabolism and bioenergetics. The chemistry of nutrition and hormone action.

Che 575 **Topics in biochemistry (3)**
Special topics of current interest in biochemistry. Topic to be announced prior to registration for the course.

Che 591 **Seminar (1-2)**
Topics of current interest in chemistry.

Che 610 **Research and thesis (3 or 6)**
An original investigation in a specific area under the direction of a staff member.

COMPUTER SCIENCE See Mathematics

COUNSELOR EDUCATION See Education

Earth and Space Science

ESS 501 **Earth science for secondary school teachers (3)**
The earth's composition and history; processes that occur on and within the earth. Recent curricula and teaching materials.

ESS 510 **Principles of physical geology (3)**
The composition of the earth (minerals and rocks) and earth processes (weathering, erosion, metamorphism, volcanism, diastrophism).

ESS 512 **Historical geology (3)**
The geologic history of the earth and the evidences for this history. Examination of fossils and geologic maps.

ESS 513 **Principles of geochemistry [also Che 513] (3)**
Migration and distribution of the chemical elements within the earth; chemistry of the lithosphere, atmosphere, hydrosphere, and biosphere; chemical changes throughout earth history; the geochemical cycle.

ESS 514 Mineralogy for the science teacher (3)

Properties, identification, occurrence, and crystallography of the more important minerals. Fundamentals of mineral composition and structure.

ESS 521 Workshop in rocks and minerals (3)

Primarily for elementary school teachers. Fundamental principles for the classification, identification, and origin of rocks and minerals.

ESS 523 General geologic field studies of Southeastern Penna. (3)

Occurrence, relationships, and geologic history of the rocks, minerals, and soils of this area, studied at representative locations.

ESS 530 Principles of oceanography (3)

Geology of the ocean floor, water movements, chemical characteristics of sea water, vertical and horizontal distribution of plants and animals. Brief history of oceanography. Designed for secondary school science teachers and science specialists in the elementary school.

ESS 540 Introduction to meteorology (3)

The composition and properties of the atmosphere and the principles that influence weather conditions.

ESS 550 General astronomy (3)

Astronomical bodies from the earth to distant galaxies. Man's place in the universe.

ESS 552 Space Science (3)

Selected topics from astronomy and related sciences including the problems and results of exploring the universe beyond the earth's atmosphere.

ESS 556 Workshop in Aerospace Science (3)

In-depth study of activities and materials adaptable to elementary school instruction in aeronautics, astronomy, meteorology, rocketry, and space biology.

ESS 571 Astronomy for the elementary teacher (3)

Basic concepts in astronomy and their application to the elementary school program.

Economics

Eco 530 Economics and public policy (3)

The principles and methods of economic analysis are applied to an evaluation of the American economic system. Inflation, recession, and economic growth; problems of public finance and taxation; public policy regarding the concentration of economic power.

Eco 531 Comparative economic systems (3)

Essential economic features of economic systems, including capitalism, socialism, communism, and fascism.

Eco 532 History of economic thought (3)

The growth and development of contemporary economic thought from Plato to the present, with emphasis on the mercantilist, classical, marginalist, and Keynesian schools.

Eco 533 Teaching economics in secondary schools (2)

Basic principles of economic reasoning and analysis and methods for teaching these principles. Teaching materials and aids are evaluated.

Eco 534 Economics of developing areas (3)

Description and analysis of models of economic development as they apply to developing areas today. Special emphasis placed upon current problems of capital accumulation, population, development of human resources, agriculture, international trade, and planning in relation to developing countries. **Prerequisite:** Eco 232 or permission of instructor.

Eco 535 The Soviet economic community (3)

Analysis of economic relationships within the Soviet Bloc; communist economic activities abroad. **Prerequisite:** Eco 232 or permission of instructor.

Eco 550 Seminar in economics (2)

Selected problems in economics. The subject will be announced in advance of each semester. **Prerequisite:** SSc 500.

Eco 590 Independent studies in economics (1-3)

Research projects, reports, and readings in economics. **Prerequisite:** approval of department chairman.

Education

Counselor Education

EdC 503 **Principles and techniques of guidance (2)**
Historical development, philosophical foundations, and determinants of guidance in contemporary elementary and secondary education. Special services, testing, group and individual guidance and counseling, and other tools. Guidance as a profession; ethics; current developments and trends.

EdC 540 **Evaluative methods in guidance I (2)**
Assessment of intelligence, achievement, special abilities, and aptitudes. Concepts such as reliability, validity, and standardization are presented. Elementary and secondary applications are stressed.

EdC 541 **Evaluative methods in guidance II (2)**
Continuation of EdC 540 for elementary and secondary counselors. Emphasis is on assessment of interests, values, attitudes, and personality. Further study of test selection, administration, scoring, and interpretation.

EdC 556 **Career development and informational services (2)**
Theories and techniques of career development in children, adolescents, and adults for elementary and secondary counselors. Collection, classification, filing, use, and dissemination of occupational, educational, and social information.

EdC 567 **Group dynamics (2)**
Appreciation and applications of principles from the behavioral sciences in the understanding of small-group behavior in typical classrooms and group guidance settings. Development of competencies in group leadership; improvement of morale and productivity; translation of educational experiences into positive decisions about self and environment.

EdC 568 **The professional counselor in the elementary school (3)**
Role, responsibilities, and practices of the contemporary elementary guidance counselor. Development of the guidance program; its relationship to curricula; position of the counselor with respect to administration, parents, children, and teachers.

EdC 569 **The professional counselor in the secondary school (3)**
Role, responsibilities, and practices of the contemporary secondary guidance counselor. Study includes referral resources, parental conference techniques, the counselor's relationship with administration and staff, inter-institutional articulation, curricula, and administrative aspects of the guidance program.

EdC 570 Principles and techniques of counseling I (2)

Directive, non-directive, and eclectic techniques for assisting clients with various types of personal, social, vocational, and educational problems.

EdC 573 Principles and techniques of counseling II (2)

Improvement of counseling practice as it relates to professional responsibility and ethics to the counselee, his parents, and to school personnel. Group procedures for counseling.

EdC 580 Field experiences for the elementary counselor (1)

Emphasis is on becoming familiar with elementary counseling practices in selected elementary schools. The student observes the performance of guidance duties by the elementary counselor and the organization and administration of the elementary guidance program.

EdC 581 Field experiences for the secondary counselor (1)

Emphasis is on becoming familiar with the secondary counseling practices in selected secondary schools. The student observes the performance of guidance duties by the secondary counselor and the organization and administration of the secondary guidance program.

EdC 590 Practicum in guidance and counseling (3)

Supervised practice guidance and counseling in an approved public school. In addition to his work under the direction of a professional counselor in a school setting, the student meets at the College with the practicum supervisor for intensive seminar activities. The candidate must plan this course one term in advance. Required of all candidates for certification.

Educational Research

Res 520 Research design (2)

Principles for the efficient design of experiments and other types of observational programs with emphasis on sampling techniques, methods of analysis, and threats to valid inference. **Prerequisite:** Psy 501.

Res 530 Seminar in non-parametric statistics (1)

Selection and use of non-parametric tests for significance. Appropriate non-parametric tests for specific research designs are studied. One sample design and designs of two or more samples both independent and related are discussed. **Prerequisite:** Psy 501.

Res 592 **Internship program in educational research (2)**
This internship program provides an opportunity for prospective educational researchers to utilize their skills in the design, conduct, and analysis of a study, and in preparing a report of the research. The internship will be served in local educational agencies, county offices, federal project centers, the Pennsylvania Department of Education, or other research environments. The intern will be under the supervision of both host and College personnel.

Res 600 **Research Report (2)**

Res 610 **Thesis (3)**

Elementary Education

EdE 501 **Introduction to graduate study in elementary education (2)**
A survey course designed to develop the skills and background knowledge needed for graduate study in elementary education. Should be taken early in the program; must be completed before applying for admission to degree candidacy.

EdE 503 **Early childhood seminar and practicum I (3)**
The first half of a two-semester course for teachers and directors of child care centers. The two semesters consist of: I. Study of child development and learning, programs for young children, and organization and administration of child care centers. II. Directed experiences with young children. III. Supervised on–the–job work in child care centers. No credit given until both EdE 503 and 504 are completed; must be taken in same academic year. Open by departmental permission only.

EdE 504 **Early childhood seminar and practicum II (3)**
See description for EdE 503. **Prerequisite:** EdE 503.

EdE 505 **The teacher in the elementary school (2)**
An introductory survey dealing with the role of the elementary teacher and with the content and organization of the elementary curriculum. A course for those whose undergraduate major was **not** elementary education. Not open, except by departmental permission, to students whose undergraduate major was elementary education.

EdE 522 **Teaching the communication skills (2)**
The teaching of oral and written language (listening, speaking, and writing): content, methods, materials, and organization. **Prerequisite:** a recent basic course in language arts (including reading) or departmental approval.

EdE 525 Curriculum and research in the language arts (2)

A survey of the language needs of elementary school children and a review of current research in language arts; planning the curriculum in terms of both these areas. **Prerequisite:** EdR 510 and EdE 522 or equivalents and teaching experience in the elementary school.

EdE 530 Social studies in elementary education (2)

A basic course in the teaching of social studies, dealing with content, materials, and methods (including the unit approach). Designed for those whose undergraduate major was **not** elementary education. **Prerequisite:** EdR 510 or equivalent.

EdE 532 Curriculum and research in social studies (2)

Curriculum planning; modern teaching methods; instructional materials; recent research and its application in the classroom; use of maps and globes. **Prerequisite:** educational psychology and EdR 514.

EdE 541 Unit teaching in the elementary school (2)

An intensive study of the unit method of teaching and the integrated curriculum, with emphasis on the content fields. **Prerequisite:** a recent course in the teaching of science, social studies, or health in the elementary school.

EdE 543 Creative expression in the elementary school (2)

Theory and practice in developing the child's interests and creative abilities in art, music, language, and literature. **Prerequisite:** undergraduate major in elementary education or all required courses under B, Area of Concentration.

EdE 545 The kindergarten-primary program (2)

An advanced course covering content, principles, procedures, and materials in kindergarten and the primary grades. **Prerequisite:** teaching experience in the elementary school.

EdE 547 Elementary school curriculum (2)

Current trends and basic problems in the elementary school curriculum; practical creative projects and investigations dealing with actual teaching situations. Should be taken during last six credits of work. **Prerequisite:** all required courses in degree program or departmental approval.

EdE 551 Child development and behavior I (3)

A basic course dealing with child development and behavior from birth to adolescence, with specific application to elementary education. Designed for students with no recent undergraduate course in child development. **Prerequisite:** general psychology and educational psychology.

EdE 553 Child development and behavior II (3)
A review of principles of growth and development; theories of behavior and personality development; and clues to identifying children with problems. Case studies of elementary school children are read and discussed. **Prerequisite:** a recent basic course in child development (EdE 551 or equivalent).

EdE 560 Meeting individual needs of children (2)
An advanced course concerned with methods and materials for individualizing instruction in the subject and skill areas and with meeting individual needs in personal adjustment. **Prerequisite:** Undergraduate major in elementary education or all required courses under B, Area of Concentration.

EdE 561 Guidance in the elementary school (3)
Focuses on the positive and preventive aspects of guidance, the roles of the classroom teacher and the guidance counselor, and the cooperative approach in promoting each child's growth. Designed for elementary education majors; open to others by departmental permission. **Prerequisite:** experience and/or course background in elementary education and a recent basic course in child development.

EdE 563 Evaluation in the elementary school (2)
The diagnostic approach in evaluating the various aspects of children's growth; informal and formal methods of evaluation. **Prerequisite:** undergraduate major in elementary education (including child development) or all required courses under B, Area of Concentration.

EdE 565 Effective classroom management (2)
The teacher's role in planning and managing activities which facilitate classroom instruction and learning. Includes planning and scheduling of learning activities, caring for class routines, insuring availability of instructional materials, and efficient utilization of school time. **Prerequisite:** undergraduate major in elementary education or all required courses under B, Area of Concentration.

EdE 570 Supervision in the elementary classroom (2)
Basic concepts and practices involved in working with teachers and student teachers toward the improvement of instruction. Designed primarily for teachers with some supervisory responsibility (e.g., team leaders, cooperating teachers). **Prerequisite:** departmental approval.

EdE 600 Research Report (1)

EdE 610 Thesis (3)

For courses in Reading see School of Education: Reading

Instructional Media Education

EdM 501 **Orientation to educational media (3)**
A survey of modern educational media with opportunities for laboratory activities.

EdM 501 or its equivalent is prerequisite to all of the EdM (Educational Media) courses which follow.

EdM 502 **Selection and effective utilization of educational media (2)**
An advanced course which evaluates diverse types of educational media and explores means of integrating these media into the instructional situation.

EdM 505 **The motion picture in education (2)**
History and development of the motion picture, with emphasis on educational motion pictures. Cinematographic techniques; the impact of 35 mm., 16mm., and 8 mm.; the single-concept instructional film. An evaluation of diverse types of films as they apply to types of learning.

EdM 508 **Instructional materials in the elementary school curriculum (2)**
Practice in techniques of using and evaluating communications media in the classroom. Correlating audio-visual materials and techniques with the elementary program.

EdM 509 **Instructional materials in the secondary school (2)**
Using instructional materials in the secondary school; their expanding role; prospects for their contribution to organizational, philosophical, and pedagogical changes in the future.

EdM 511 **Programmed instruction (3)**
Program writing is stressed in this workshop-type course covering the history and pyschology of programmed instruction. Trends in programmed instruction; program evaluation; programming techniques. **Prerequisite:** general psychology.

EdM 513 **Producing auto-instructional programs (3)**
Techniques in the production of slide-tape presentations, audio-tape presentations, 8 mm. magnetic sound film lessons, and other self-teaching sequences. **Prerequisite:** EdM 511, 525.

EdM 519 **Library science (2)**
Organization and administration of libraries, with emphasis on instructional materials. Selecting, cataloguing, and evaluating instructional materials.

EdM 520 **Designing instructional materials (3)**
Techniques of lettering and design as they apply to display and projection materials.

EdM 522 **Production of non–projected and projected materials (3)**
Basic local production techniques including copying, duplicating, mounting, displaying, and evaluating graphics and flat pictures. Investigates techniques for designing and locally producing projectuals; evaluates commercial techniques of transparency production. **Prerequisite:** EdM 520.

EdM 524 **Advanced projectual production (3)**
Design and production of projectuals using technamation, color imbibition, photocopy, and advanced diazo techniques. Investigation of commercial production of transparencies. **Prerequisite:** EdM 522.

EdM 525 **Photography for teachers (3)**
A basic laboratory course in the taking and processing of still pictures.

EdM 526 **Advanced still photography (3)**
Lecture and laboratory experiences in the use of large–format cameras. **Prerequisite:** EdM 525.

EdM 529 **Instructional use of the 8 mm. motion picture camera (3)**
Prepares teachers to produce and/or guide students in the production of 8 mm. films.

EdM 530 **Cinematography I (3)**
Scripting and shooting 16 mm. motion pictures.

EdM 531 **Cinematography II (3)**
Editing and sound recording on 16 mm. films. **Prerequisite:** EdM 530.

EdM 533 **Television in education (3)**
The development of educational television and the instructional use of commercial, educational, and closed–circuit television in the classroom.

EdM 534 **Instructional television production I (3)**
Planning, writing, producing, and evaluating instructional television productions. **Prerequisite:** EdM 533.

EdM 535 **Instructional television production II (3)**
Production of telecasts in selected subject areas with emphasis on videotape recording. **Prerequisite:** EdM 534.

EdM 552 **History and philosophy of educational media (2)**
Historical development of audio–visual instruction. The philosophy underlying the combined use of sight and sound in the teaching–learning process.

EdM 555 **Learning theories related to educational media (2)**
The role of perception in sensory experience; inner cognitive processes in relation to maturation, goals and drives, types of learning, and to environment. Psychological processes are related to the learning resources provided by educational media.

EdM 560 **Organization and administration of the educational media program (3)**
The function of the school's educational-media program; selection and evaluation of materials and equipment; unit costs; problems of developing and maintaining an efficient operation. **Prerequisite:** 12 graduate credits in educational media.

EdM 563 **Field study in educational media (3)**
A scheduled group or individual tour, foreign or domestic, in which students investigate notable installations or projects in educational media.

EdM 565 **Seminar in educational media (2)**
Explores current problems in the use of instructional media. **Prerequisite:** 12 graduate credits in educational media.

EdM 590 **Internship program in educational media (2)**
Practicum in supervising and implementing instructional services. **Prerequisite:** 18 credits in educational media.

EdM 591 **Seminar in research in communications (2)**
Basic elements of communication theory, applied to audio–visual education. Research in audio–visual communication is analyzed. **Prerequisite:** 18 credits in educational media.

EdM 600 **Research Report (2)**

Reading

EdR 510 **Foundations of reading instruction (3)**
The major areas of the reading field: reading skills development, evaluation of reading needs, and implications of the psychological processes involved. **Prerequisite:** a recent basic course in language arts (including reading) or approval of instructor.

EdR 514 **Reading in the content areas: elementary (3)**
The nature of study reading; general and specific skills involved in the reading of curricular materials; procedures involved in skill development, and evaluation; provision for individual differences and significant research. **Prerequisite:** EdR 510 or approval of instructor.

EdR 515 Reading in the content areas: secondary (3)

The teaching of reading in the various content fields: reading in the school program, problems in reading curricular materials, meeting needs in different curriculum areas, general and specific reading skills, study methods, critical reading, adjustment to individual differences.

EdR 516 Reading disabilities (3)

Individual and group procedures for diagnosis and instruction; classification of types of problems; different approaches in instruction; writing a report. **Prerequisite:** EdR 510 or approval of instructor.

EdR 521 Reading Clinic Practicum and Seminar I (3)

A laboratory course and internship. Formal and informal techniques of diagnosis. Methods of developmental and corrective instruction based on recommendations for treatment. Approaches and techniques for developing word recognition and comprehension skills. Appropriate use of materials. Effective procedures for grouping. Supervised experiences with children. **Prerequisite:** EdR 516.

EdR 522 Reading Clinic Practicum and Seminar II (3)

A laboratory course and internship with emphasis on the diagnosis and instruction of corrective and remedial cases. Individualization of instruction; multi-sensory approaches in the treatment of the more severe reading disabilities. Supervised experiences with children. **Prerequisite:** EdR 516.

EdR 523 Reading and linguistics (2)

Linguistic programs related to reading instruction. Basic concepts in linguistics are presented, in order to assess the influence of linguistics on current practices in reading instruction, and to evaluate relevant reading research. **Prerequisite:** EdR 510 or approval of instructor.

EdR 540 Seminar in reading (3)

Emphasis upon primary and secondary sources, findings of research studies, a critical examination of selected investigations, and original research. **Prerequisite:** EdR 522 or approval of adviser.

EdR 541 Organization and supervision of reading programs (3)

The nature and function of supervision of reading instruction and supervisory techniques; the role of the principal, supervisor, and reading consultant in the improvement of instruction; administration of a supervisory program.

Secondary Education and Professional Studies

EdF 500 Methods and materials of research in education (2)

Historical, descriptive, and experimental methods of research. Methods for locating, evaluating, interpreting, and reporting research data. Each student prepares a research prospectus.

EdS 502 Secondary school curriculum (2)

Current practices and trends in reorganizing the secondary school curriculum in the major academic area. The various integrating techniques are emphasized. Attention is given to curriculum development.

EdF 503 The emerging curriculum (3)

This course identifies and analyzes curriculum trends, beginning in 1951, for grades kindergarten through 12 by means of three comprehensive topics: (1) the curriculum reform movement, (2) emerging curriculum theory and practice, and (3) the educational reform movement.

EdF 504 Middle school workshop (4)

A workship dealing with the philosophy, administration, curriculum, staff, and facilities necessary for the most efficient educational experience in the intermediate levels of school. **Summers, on demand.**

EdS 506 The junior high school (2)

The development and function of the junior high school; the philosophy underlying its development. Curriculum, teaching assignments, characteristics of pupils, and special problems. **Prerequisite:** a course in adolescent development.

EdS 508 The core curriculum (2)

Theory and philosophy of the core curriculum. Specific core programs in secondary schools are evaluated.

EdF 509 Contemporary teaching trends (2)

Team teaching, programmed instruction, and various media of communication are evaluated in this study of contemporary trends and practices in teaching in the elementary and secondary school. Effective adaptation to newer practices is emphasized.

EdF 510 Educational foundations (3)

The history of education, integrated with educational philosophy and thought; the long evolution of educational theory and issues.

EdF 515 Federal and state role in education (2)
The past, current, and future role of the federal and state governments in education in the United States with emphasis on this role as it applies to the Commonwealth of Pennsylvania. The impact of federal legislation since 1958.

EdF 520 Comparative education (3)
Major problems of education in a number of other countries are related to similar problems in the United States. Contrasting purposes and philosophies and differences in organization and administration are analyzed.

EdF 523 Education behind the iron curtain (3)
Educational structure in the Soviet Union, past, present, and future, with emphasis on Kruschev's educational reforms and on the recent return to the ten-year school.

EdS 524 Supervision of student teaching (3)
Designed especially for teachers who cooperate or expect to cooperate in West Chester's student teaching program. Basic principles, practices, materials, and resources for an effective student teaching program. **Prerequisite:** certification for teaching.

EdF 525 The teacher and administrative leadership (2)
The relationship of the classroom teacher with other school personnel; the teacher's part in the administrative structure; maintaining an effective participatory or leadership role in the school community.

EdF 528 Creative teaching (2)
The nature and conditions associated with creativity; skills and techniques which develop the creative potential of the learner. **Prerequisite:** a course in educational psychology.

EdP 550 Advanced educational psychology (3)
The processes by which skills, understanding, concepts, and ideals are acquired; teaching practices in relation to basic research concerning learning; similarities and differences in theories of learning. **Prerequisite:** a course in educational psychology, EdF 500.

EdS 566 The activity program in the secondary school (2)
Effective practices for organizing and administering the activity program in the secondary school. The teacher's function in the homeroom, study halls, interest clubs, assemblies, student government, school publications, and additional extracurricular areas.

EdS 569 Adolescent development and learning (3)
A study of the mental, physical, emotional, and social development and behavior of the adolescent with emphasis upon various types of learning. Case studies are used.

EdF 580 **History of American Education (3)**

The nature and direction of American education, studied through individual and group research.

EdF 581 **Philosophy of education (3)**

A study of selected philosophies and their influence on educational principles and practices in a democratic social order.

EdF 590 **School law (2)**

The legal structure for educational organization on state, intermediate, and local levels. The legal status of the board of education; the legal responsibilities of the teacher; the legal responsibilities between the board of education and the student.

Special Education

EdA 537 **Developmental assessment of children with learning problems (3)**

Diagnostic procedures and subsequent educational prescriptions useful with children experiencing learning difficulties.

EdA 540 **Workshop in special education (4)**

An intensive program of observation and instruction of mentally retarded or physically handicapped children. Instructional experience with an atypical child is combined with lecture, demonstration, and case study. Primarily for in-service teachers. **Prerequisite:** permission of instructor.

EdA 570 **The mentally atypical child (2)**

A study of the mentally superior child and the mentally retarded child. **Prerequisite:** general psychology and educational psychology.

EdA 571 **Childhood learning disabilities (2)**

The study and education of the child with perceptual problems and/or minimal brain damage. **Prerequisite:** a course or courses in the psychology of exceptional children.

EdA 572 **The emotionally disturbed child (2)**

The causes, symptoms, and therapeutic approaches in the field of emotional disturbance. Opportunity for associating with mental health professionals who staff intervention programs.

Urban Education

EdU 501 **Curricular adaptations for the disadvantaged (3)**
Curricular innovations which attempt to aid the culturally disadvantaged in developing skills necessary for maximal personal adjustment to society. Spokesmen from appropriate industrial and school programs serve as resources for some sessions.

EdU 502 **Human relations in the school and community (3)**
An intensive study of the inner-city community and its close relationship with the school society. Community experiences are simulated in the classroom and professional community workers present data from their firsthand experiences.

ELEMENTARY EDUCATION See Education

English

See also Linguistics

Eng 500 **Methods and materials of research (3)**
Basic techniques and procedures in research. The major types of research and the methods of locating, evaluating, and interpreting evidence. Includes the preparation of a research outline and paper.

Eng 501 **Modern techniques for the teaching of English (3)**
Techniques of teaching language arts, composition, and literature in the secondary school. Practice in planning and designing units and courses of study.

Eng 502 **History of the English language (3)**
Review of the major influences on the development of the English language.

Eng 503 **Old English language and literature (3)**
An introductory study of the language through a reading of selected religious and secular poetry and prose. **Prerequisite:** Eng 502 or permission of instructor.

Eng 507 **Middle English language and literature (3)**
An introductory study of the language (1150–1450) through a reading of selected texts (exclusive of Chaucer). **Prerequisite:** Eng 502 or permission of instructor.

Eng 508 **Standard English as a second language or dialect (3)**
Methods and materials for teaching standard English as a second language and as a second dialect to speakers of other dialects. **Prerequisite:** Lin 509 or permission of instructor.

Eng 519 **Studies in American English (3)**
Historical processes in the development of American English. American and British English. Regional and social dialects of American English. usage, and sociolinguistics. **Prerequisite:** Lin 501 or permission of instructor.

Lit 506 **Beowulf (3)**
An analysis of the entire poem in Old English. Emphasis on the artistic, linguistic, and historic values. **Prerequisite:** Eng 503 or equivalent.

Lit 511 **English literary criticism [1800 to present] (3)**
Critical dicta which have influenced the course of English literature since 1800. Special consideration given to Coleridge, Hazlitt, Ruskin, Arnold, and others. **Prerequisite:** one college course in English literature.

Lit 512 **American literary criticism [1800 to present] (3)**
Critical dicta which have influenced the course of American literature since 1800. Poe, Whitman, Howells, and the New England writers. **Prerequisite:** one college course in American literature.

Lit 514 **American literary movements (3)**
Major movements in the development of American literature. Influence of leading writers on literary concepts, trends, and critical dicta. **Prerequisite:** one college course in American literature.

Lit 515 **Comparative literature (3)**
Studies in international literary and cultural relations: the characteristics and relations of universal literary types, themes, and genres.

Lit 516 **Major twentieth century American poets (3)**
Robinson, Frost, Pound, Eliot, Crane, Stevens, Cummings, Williams, and others. Critical standards and theories of poetry in the century.

Lit 517 **Literary spokesmen for American ideas (3)**
Intensive study of American writers who have depicted and interpreted major intellectual currents in American culture. Modern writers who deal with problems of American life.

Lit 519 **Major twentieth century Irish writers (3)**
A comprehensive study of significant Irish writers of the twentieth century and of their various forms.

Lit 520 **Nineteenth century novel (3)**
Scott, Peacock, Disraeli, Gaskell, Thackeray, Dickens, Reade, Trollope, the Brontes, Eliot, Meredith, Stevenson, Kipling, Carroll, Hardy, Gissing, Moore, Wilde, Butler, Shaw, Conrad, and others.

Lit 521 **English literature to Chaucer (3)**
Significant figures in English literature beginning with the Old English Period and closing with the Pearl Poet.

Lit 522 **Chaucer (3)**
A study of a selection of the **Canterbury Tales,** of **Troilus and Criseyde,** and of Chaucerian sources and influences.

Lit 523 **Eighteenth century novel (3)**
Master works of prose fiction in England from Defoe to the end of the century. Development of the various types of novels. Philosophies of the major authors.

Lit 524 **British and continental short story (3)**
The short-story form: its origin and development. Current trends. Influences of German, French, and Russian writers upon the British form.

Lit 525 **Biography (3)**
Survey of biographical writings from Plutarch to the present. Origins and trends; Boswell and other major biographers.

Lit 526 **Tudor poetry and prose (3)**
Nondramatic literature in England from Wyatt to Jonson. The interplay of exterior and interior influences in developing England's Golden Age.

Lit 527 **Stuart literature to the Commonwealth (3)**
Growth of English literature from the accession of James I to 1650. The metaphysical school, the sons of Ben, and the political writers.

Lit 528 **Milton (3)**
The work of John Milton, including major and minor poems and some of the prose.

Lit 529 **Victorian prose (3)**
Prose writers of the last half of the nineteenth century.

Lit 530 **Victorian poetry (3)**
Poets of the last half of the nineteenth century, particularly Tennyson, Browning, and Arnold. Literary movements of the period.

Lit 531 **Shakespeare's predecessors in drama (3)**
Development of the drama from classical antiquity to Shakespeare. The nature, structure, and other aspects of the principal types of pre-Shakespearean drama.

Lit 532 **Hemingway and Faulkner (3)**
The works of Hemingway and Faulkner and the literary relationship of these works.

Lit 533 **Romantic prose and poetry (3)**
The poets of the early nineteenth century with emphasis upon Wordsworth, Coleridge, Keats, Shelley, Byron. Literary movements of the time.

Lit 534 **Twain and James (3)**
The works of Mark Twain and Henry James.

Lit 535 **Twentieth century American writers (3)**
Major writers and literary movements from 1900 to the present. **Prerequisite:** one college course in American literature.

Lit 536 **Twentieth century drama (3)**
Principal British and American playwrights from Shaw to Pinter and Albee, including an analysis of important plays and trends.

Lit 537 **Emerson and Thoreau (3)**
The works of Emerson and Thoreau; writers associated with them.

Lit 538 **Hawthorne and Melville (3)**
A study of their works and of representative literary criticism.

Lit 539 **Eighteenth century poetry and prose (3)**
Survey of the literature of the era, with emphasis on aesthetic theory and the evolution of poetic techniques.

Lit 540 **Restoration and eighteenth century drama (3)**
History of British drama from the reopening of the theaters to Sheridan. Major playwrights and study of theater history.

Lit 541 **Greek and Roman literature in translation (3)**
Major dramatic, epic, and lyric works from the classical period; their influences upon English and American literature.

Lit 542 **Spenser (3)**
Spenser's poetic work, with emphasis on **The Faerie Queen** and its influence.

Lit 543 **Shakespeare's comedies and poems (3)**
Nine comedies analyzed. The poems read in relation to Shakespeare's developing dramatic and poetic power.

Lit 544 **Shakespeare's tragedies and histories (3)**
Four histories and seven tragedies read with analysis of dramatic and poetical effects.

Lit 546 **Shakespearean literary criticism (3)**
Survey of Shakespearean critical schools; student analysis of a play's interpretation or an interpretive problem.

Lit 547 **Jacobean and Caroline drama (3)**
English dramatic literature from 1603–1642. Includes Jonson, Marston, Webster, Chapman, Middleton, Rowley, Tourneur, Ford, Shirley, Beaumont, and Fletcher.

Lit 550 **Literature for the elementary school (3)**
The content and approach of the literature program in the elementary school. Designed primarily for elementary school teachers, this course can be pursued profitably by administrators, curriculum specialists, and others interested in this literature.

Lit 551 **Literature for the secondary school (3)**
An examination of the literary interests of the secondary school student and the relation of these interests to the curriculum. A discussion of the works of major writers who appeal to the teen-age student.

Eng 690 **Seminar in English literature (3)**
Topic announced annually.

Eng 695 **Seminar in American literature (3)**

Foreign Languages

See also Linguistics

Professional Education

Lan 500 **Methods and materials of research (3)**
Techniques of research in foreign language education including sources, design, interpretation, evaluation, and reporting of data.

Lan 502 **Second languages in the elementary school (3)**
Problems in teaching second languages in the elementary school. Curriculum design, bilingual education, classroom techniques, articulation, materials, testing. Preferably, Lin 501 or equivalent should precede Lan 502.

Lan 503 **Techniques of foreign language teaching (3)**
Advanced course in recent theoretical bases; methods for teaching beginning and advanced levels; curriculum design and evaluation. Preferably, Lin 501 or equivalent should precede Lan 503.

Lan 504 **Use of media in language teaching (3)**
The role of media in language instruction including the tape recorder, language laboratory, television, and the computer.

Lan 580 **Seminar in second language education (1-4)**
Specialized workshop seminar devoted to a particular area of foreign language education.

Lan 585 **Institute in second language education (4-8)**
Intensive in-depth study of a particular area of foreign language education.

French

Fre 511 **Romance philology [French] (3)**
Historical development of French phonology and morphology from their beginnings to the present. Old French dialects.

Fre 512 **Explication de Textes (3)**
This French technique of textual and stylistic analysis is studied and practiced.

Fre 513 **Phonetics (3)**
Mastery of pronunciation and intonation of the French language through use of the phonetic alphabet. Laboratory drill with recordings of leading phoneticians.

Fre 514 **Advanced grammar and stylistics (3)**
A conceptual approach to French grammar. Principles of French grammar and syntax; evaluation of recent changes in grammar and usage.

Fre 515 **French civilization (3)**
French civilization as reflected in its art, music, philosophy, and socio-political structure.

Fre 520 **Rabelais (3)**
Rabelais: critical studies of his life and works.

Fre 521 **Moliere (3)**
The plays of Moliere; his life and times. History of comedy in France.

Fre 522 **Voltaire (3)**
Major works of Voltaire. Analytical scrutiny of his philosophical views. The impact of Voltaire on the character of Western civilization.

Fre 523 **Rousseau (3)**
The works of Rousseau; their philosophical implications and stylistic character. Analysis of the important critical writings on Rousseau.

Fre 524 **Balzac (3)**
The works of Balzac and a review of Balzacian criticism.

Fre 525 **Proust (3)**
Reading and analysis of "A la Recherche du Temps Perdu." Survey of Proustian criticism; Proust the man. His place in the history of the novel.

Fre 530 **French classical tragedy (3)**
The tragedies of Corneille and Racine; the history of tragedy in France.

Fre 531 **The French novel [through the nineteenth century] (3)**
History of the novel in France. The works of the major French novelists of the nineteenth century: Hugo, Stendhal, Balzac, Flaubert, Zola.

Fre 532 **The twentieth century French novel (3)**
The French novel in the twentieth century and the philosophical, social, and aesthetic doctrines which helped to shape this literary form.

Fre 533 **French lyric poetry (3)**
Evolution of French lyric poetry, with stress on the nineteenth century. Forms, techniques, rules of French versification.

Fre 534 **The contemporary French theater (3)**
Principal dramatic works of the twentieth century, analyzed against the history of the theater in France.

Fre 540 **Medieval French literature (3)**
Selected literary masterpieces representing the various medieval genres: lyric poetry, epic, romance, allegory, fabliaux, prose chronicle, and drama.

Fre 541 **French literature of the Renaissance (3)**
Evolution of literary doctrine in the French Renaissance. The influence of various philosophical and aesthetic currents such as Platonism and Petrarchism.

Fre 542 **Studies in the seventeenth century (3)**
Selected writers and their works. The development of literary and aesthetic doctrines of the classical period.

Fre 543 **Studies in the eighteenth century (3)**
Selected masterpieces of the eighteenth century. Evolution of social and political ideas as reflected in the literary activity of the period.

Fre 544 **Studies in the nineteenth century (3)**
Selected writers of the nineteenth century in France along with an examination of the literary doctrines which evolved through the century.

Lan 550 **Seminar in methods and materials of research (3)**
The principal tools of research in the field of foreign languages and literatures. Methods of conducting and reporting research, emphasizing correctness of form and mechanics of scholarly writing.

Lan 590 **Independent study (1-3)**

Lan 600 **Research Report (1-2)**

Lan 610 **Thesis (6)**

German

Ger 511 **German philology (3)**
German phonology and morphology from their beginnings to the present. The chief characteristics of Gothic, Old Saxon, and Old High German. Analysis of the language of the Low German Heliand and the earliest High German documents.

Ger 513 **Phonetics (3)**
The sounds, forms, and structure of modern standard German, using recorded materials and selected texts.

Ger 514 **Advanced grammar and stylistics (3)**
The stylistic qualities of modern German, analyzed in selected texts. Oral and written drill.

Ger 515 **German civilization (3)**
Social structure of Germany; evolution of its institutions; German achievements in the arts.

Ger 520 **Goethe (3)**
Goethe's works and his development toward classicism. Critical works dealing with his life and writings.

Ger 521 **Schiller (3)**
Schiller's dramatic works and his development toward classicism. Critical works dealing with his life and writings.

Ger 522 **Rilke (3)**
Rilke's poetical works and major critical works which deal with his life and writings.

Ger 523 **George (3)**
George's poetry and major critical works dealing with his life and writings.

Ger 524 **Thomas Mann (3)**
The novels of Mann; works of criticism dealing with his life and writings.

Ger 525 **Bertolt Brecht (3)**
The theater of Brecht and critical literature dealing with his life and writings.

Ger 526 **Kafka (3)**
The works of Kafka; criticism dealing with his life and writings.

Ger 531 **The twentieth century German novel (3)**
The works of the major novelists with particular attention to the writers of "Gruppe 47" (post-World War II writers).

Ger 532 **The Novelle (3)**
The German short story from Goethe to the present, including the German Feuilleton and the post-World War II writers.

Ger 533 **German lyric poetry (3)**
Major representative poets of the twentieth century.

Ger 534 **German drama of the nineteenth century (3)**
The works of the major German dramatists of the nineteenth century.

Ger 535 **German drama of the twentieth century (3)**
The works of the major dramatists of the twentieth century with particular attention to expressionism and post-World War II dramatists.

Ger 540 **German literature of the Middle Ages (3)**
German literature of the Middle Ages with emphasis on the Popular and Court Epic and the lyric poetry of the Golden Age.

Ger 541 **Poetry of the Reformation and the Baroque Period (3)**
Literary trends in the Reformation and the Baroque Period.

Ger 542 **The Enlightenment and Storm and Stress (3)**
The masterpieces of the Enlightenment and Storm and Stress. Attention given to English influences, especially Shakespeare.

Ger 543 **The German Romantics (3)**
Selected writers of the German Romantic period.

Ger 544 **Nineteenth century German realism (3)**
Masterpieces of the German Realists of the nineteenth century.

Ger 545 **The German expressionists (3)**
Major representative poets of the expressionistic movement.

Lan 550 **Seminar in methods and materials of research (3)**
See under **French** for course description.

Lan 590 **Independent study (1-3)**

Lan 600 **Research Report (1-2)**

Lan 610 **Thesis (6)**

Latin

Lat 511 **Comparative grammar and syntax of Greek and Latin (3)**
The relation of Greek to Latin within the Indo-European family of languages. Survey of the external histories of Greek and Latin. Greek and Latin phonology and morphology with references to principles of syntax.

Lat 512 **History of the Latin language (3)**
Development of the Latin language from the earliest inscriptions to the ninth century A.D., with some consideration of the prehistoric language and people of Rome.

Lat 513 **Italic dialects (3)**
The Italic branch of the Indo-European family of languages, exclusive of Latin: Oscan and Umbrian grammar. Italic inscriptions. A brief survey of other dialects.

Lat 514 **Advanced Latin prose composition and translation (3)**
An intensive review of Latin syntax, with translation of English passages into Latin and vice versa.

Lat 520 **Works of Julius Caesar [advanced course] (3)**
The Alexandrine, African, Spanish, Gallic, and Civil Wars, with reference to their political backgrounds.

Lat 521 **Cicero's philosophical essays (3)**
Studies in the **Somnium Scipionis, Tusculan Disputations, De Natura Deorum** and **De Officiis,** with reference to Cicero's political theory and practice.

Lat 525 **Latin metre and verse (3)**
The formal structure and development of Latin verse from its beginnings to the twentieth century. Illustrative readings in early, classical, medieval, and modern Latin poetry.

Lat 526 **Greek and Latin epic (3)**
The Greek epic from Homer to Apollonius of Rhodes and the Latin epic from Naevius to Vergil. Readings from the classical epics.

Lat 527 **Roman historiography (3)**
Selections from the writings of Sallust, Caesar, Livy, Tacitus, and Suetonius. Origins, development, and influence of Roman historiography.

Lat 528 **Roman satire (3)**
History of Roman satire and the development of Lucilian Satire. A comparative study of the satires of Horace, Persius, and Juvenal.

Lat 529 **The Latin novel (3)**
Emergence and development of the Latin novel. Readings in Petronius' **Cena Trimalchionis,** Seneca's **Apocolocyntosis,** the Pompeian Inscriptions, and Apuleius' **Metamorphoses.**

Lat 530 **Medieval Latin literature (3)**
Latin poetry and prose from the fourth to the seventeenth centuries, with emphasis on the acquisition of good reading knowledge of medieval Latin in different periods and styles.

Lat 531 **Latin epigraphy (3)**
Latin inscriptions from the earliest period to the eighth century A.D. A study of the development of the Latin language.

Lat 532 **Roman archaeology (3)**
The relics of Roman civilization and culture in Italy, Africa, Spain, France, and Britain.

Lat 533 **Historical numismatics (3)**
Greek, Roman, and Near-Eastern coins and medals which document Mediterranean history.

Lat 534 **Geography of ancient Greece and Italy (3)**
Readings in ancient geographers, including Claudius Ptolemy and Strabo, with attention to the latter's method.

Lan 550 **Seminar in methods and materials of research (3)**
See under **French** for course description.

Lan 590 **Independent study (1-3)**

Lan 600 **Research Report (1-2)**

Lan 610 **Thesis (6)**

Spanish

Spa 510 **Advanced Spanish phonetics (3)**
Theoretical and practical approach to phonology, phonetics, and phonetics transcription. Regional and dialectical variations, using Tomas Navarro Tomas' **Manual de pronunciacion espanola.**

Spa 511 **Romance philology [Spanish] (3)**
The development of Old Spanish from Vulgar Latin and Protoromance, with analysis of Spanish phonology, morphology, and syntax. Readings in Old Spanish.

Spa 512 **Advanced Spanish grammar and stylistics (3)**
An informal rapid review of Spanish grammar, with emphasis on problems fundamental to the American classroom. Exercises include idiomatic expression, various levels of style, and translation.

Spa 514 **Spanish civilization (3)**
Major philosophical and artistic contributions of the Hispanic world to Western civilization. Spain's social and economic institutions, and the character of her people as reflected in the arts.

Spa 520 **Cervantes (3)**
Life and works of Miguel Cervantes Saavedra: **Novelas ejemplares, Ocho comedias y ocho entremeses, La Numancia, La Galatea,** all of which lead to study of the meaning, philosophy, and influence of **Don Quixote.**

Spa 521 **Juan Ruiz, Arcipreste de Hita (3)**
The **Libro de Buen Amor** as a major work in Spain's poetic development.

Spa 522 **Lope de Vega (3)**
The Spanish comedia, viewed as an expression of the Spanish people. The popular and national elements of this theater. Lope de Vega as the chief innovator and leading figure of the first half of the Golden Age.

Spa 523 **Galdos (3)**
Benito Perez Galdos: his novels of social reform, enlightenment and conversion.

Spa 524 **Valera (3)**
Juan Valera's psychological novels, set in nineteenth century Andalusia.

Spa 525 **Unamuno (3)**
The philosophical ideas of Unamuno studied in his critical essays, plays, and novels.

Spa 530 **Spanish Comedia of the Golden Age (3)**
Survey of the "Comedia" before Lope de Vega; the contributions of Lope de Vega; the works of Tirso de Molina and Ruiz de Alarcon, concluding with the Baroque theater of Pedro Calderon de la Barca.

Spa 531 **The Spanish novel before Cervantes (3)**
Survey of the main trends of Spanish prose before Cervantes. The novels of chivalry, **El Conde Lucanor,** and the "novela sentimental."

Spa 532 **The picaresque novel (3)**
The picaresque novel as an indigenous creation of Spain; Lazarillo de Tormes, Guzman de Alfarache, Vida del Buscon; the picaresque novel as a literary tradition in Spain and an influence in other literature.

Spa 533 **The Generation of 1898 (3)**
The revitalizing forces which took hold in the late nineteenth century and a study of the works of Unamuno, Azorin, Menendez Pidal, Pio Baroja, Valle Inclan, Benavente, Martinez Sierra, and Ruben Dario.

Spa 534 **Spanish lyric poetry (3)**
Spanish lyric poetry, with emphasis on early forms, the Renaissance, Italianate forms, and the blossoming of lyric poetry in the nineteenth and twentieth centuries.

Spa 540 **Medieval Spanish literature (3)**
The **mester de juglaria** and the **Poema del Cid;** early related epics and the **mester de clerecia;** Spain's early historical chronicles. Beginnings of the Spanish theater.

Spa 541 **The Renaissance in Spain (3)**
Leading proponents of the humanistic spirit in Spain: Nebrija, Erasmus, the brothers Valdes. The Spanish Inquisition, the Renaissance theater and novel: Juan del Encina, Torres Naharro, and **la Celestina.**

Spa 542 **Spanish Romanticism (3)**
The Spanish Romantics and **costumbristas:** Duque de Rivas, Espronceda, Gomez de Avellaneda, Becquer, Larra, Mesonero Romanos. The dramatic novels of Pardo Bazan, Palacio Valdes, Clarin, and Galdos.

Spa 543 **Contemporary Spanish theater (3)**
The "Ibsenite" and social dramas of the late nineteenth century represented by the plays of Lopez de Ayala, Jose Echegaray, and Galdos. The transition period headed by Martinez Sierra and the brothers Quintero. Spain's modernistic drama exemplified by Federico Garcia Lorca and Alejandro Casona.

Spa 544 **Masterpieces and movements in Spanish literature (3)**
A seminar on the development of Spanish thought and artistic expression through study of selected masterpieces of literature and art.

Spa 545 **The Latin American novel (3)**
The development of the novel in Latin America. The colonial period, the period of independence, the romantic period; realism, modernism, **criollismo,** and naturalism.

Lan 550 **Seminar in methods and materials of research (3)**
See under **French** for course description.

Lan 590 **Independent study (1-3)**

Lan 600 **Research Report (1-2)**

Lan 610 **Thesis (6)**

FRENCH See Foreign Languages

Geography

Geo 500 **Methods and materials of geographic research (2)**
Sources of geographic information and methods of compiling it into reports and geographic writing. An outline for either a thesis or a research report is prepared.

Geo 501 **Advanced geomorphology (3)**
Landform structures and the processes which brought them about. Interpreting landforms in relation to cultural geography with topographic maps and aerial photographs.

Geo 502 **Regional geomorphology of North America (3)**
A geological analysis of the surface configurations of North America, with emphasis on geographical relationships to these features. **Prerequisite:** introductory geology or geomorphology.

Geo 503 **General climatology (3)**
Meteorological factors influencing climates of the world and their general patterns. Survey of world climates.

Geo 504 **Climatology of the continents (3)**
The earth climates are examined on a continental basis, with emphasis on problem climates that deviate from the normal pattern.

Geo 505 **Advanced cartography (3)**
Advanced study of cartographic methods and techniques. Presentation of statistical data in map form. **Prerequisite:** introductory cartography or consent of instructor.

Geo 506 **Advanced physical geography (3)**
Basic aspects of physical geography as they apply to the total geographic concept.

Geo 507 **Advanced map interpretation (3)**
Designed to improve map-reading skills. Emphasis on increased understanding of U.S.G.S. quadrangles and special-purpose statistical maps.

Geo 520 **Problems of economic geography (3)**
Economic situations in our country and the world, with emphasis on major problems of production, surplus, marketing, conflicting national policies, special problem areas. Problems in gathering, presenting, and comparing economic data.

Geo 521 **World economic patterns (3)**
An examination of questions relating to distribution and interaction of world economic activity. A theoretical framework is explored and methodology discussed. Empirical examinations are made.

Geo 522 **Agricultural geography (3)**
Significant factors affecting the agricultural picture of today's world. Major world crops.

Geo 524 **Geography of population (3)**
Characteristics and distributions of the world's population are studied and explained.

Geo 525 **Geography of regional planning (3)**
The significance of regional planning in solving man's problems. Special attention given to regional planning projects in the area.

Geo 526 **Urban geography (3)**
A theoretical foundation for urban development is examined. The economic structure, systems of classification, and shape-point analysis methods for urban analysis.

Geo 527 **Political and global concepts in geography (3)**
Development of world political patterns. Factors affecting present trends in global concepts.

Geo 529 **Geographic influences in world history (3)**
The effect of geographic factors upon selected movements, occurrences, eras, and cultural groups in modern world history.

Geo 540 **Geography of the United States (3)**
A regional study of the United States, emphasizing relationships between physical geography and man's economic and political responses to environmental circumstances.

Geo 541 **Geography of the United States in its world relations (3)**
The interdependence of our country in the world of nations. Changing patterns in the United States in relation to economic, strategic, and political developments in other parts of the world. **Prerequisite:** world geography.

Geo 542 **Geography of Canada (3)**
Physical and cultural regionalism of Canada. The natural resources; patterns of human occupance including agriculture, industry, and transportation.

Geo 543 **Geography of Mexico and Middle America (3)**
A regional geography of Mexico, Central America, and the West Indies. Political divisions and their present-day aspects in relation to geographic conditions. Inter-American affairs are considered.

Geo 544 **Geography of South America (3)**
A regional geography of South America: its physical base, settlement, agriculture, mining, and manufacturing. Inter-American relations are included.

Geo 545 **Geography of Europe [excluding the U.S.S.R.] (3)**
A regional study of Europe. The influence of environmental factors such as climate, landforms, and soils on the economic, social, and political progress of Europe's nations.

Geo 546 **Geography of the Soviet Union (3)**
European and Asiatic U.S.S.R. and its satellite nations. Elements of the environment and regional divisions studied in relation to the resource base and economic and political aims. Positive and negative factors of the U.S.S.R.

Geo 547 **Geography of Asia [excluding the U.S.S.R.] (3)**
Physical and cultural aspects of the geography of contemporaneous East Asia and Southwest Asia, including the Monsoon Realm.

Geo 549 **Geography of Africa (3)**
Survey of the continent as a whole and analysis of the major problems faced by the newly created African nations.

Geo 571 **Advanced conservation of natural resources (3)**
An economic and geographic appraisal of resource conservation in the United States, with emphasis on resource management in regional planning. The summer offering of this course is sometimes organized into a workshop.

Geo 572 **Seminar in resource management (3)**
Research problems in resource management are done on an individual–student or team–study basis.

Geo 580 **Seminar in geography in education (2)**
The changing role and function of geographic education in American schools. The relationship of geographic study to other curricular elements.

Geo 581 **Seminar in modern philosophy of geography (2)**
Modern geographic thought, with emphasis on contributions of American geographers and their most recent views.

Geo 582 **Seminar in geographical writing and literature (2)**
The geographic literature of various periods in the development of geographic thought and research. Experience in writing, analysis, research.

Geo 584 **Modern techniques of teaching geography (3)**
Contemporary methods and resources for the formulation, organization, presentation, and evaluation of geography lessons.

Geo 585 **Geography field methods (3)**
An advanced field course which includes both urban and land-use studies. Field methods, mapping, and the translation of field-study findings into geographical reports.

Geo 587 **Geography workshop for teachers (3)**
A combination of research, field work, teaching procedures, and group studies in one or several phases of geography.

Geo 590 **Independent studies in geography (1-3)**
Research projects, reports, and readings in geography. **Prerequisite:** approval of Department Chairman.

Geo 591-593 **Area field studies (3-9)**
A specific geographic region or area in either the United States or a foreign country is selected for field study in each course. The specific course number is assigned as new areas of study are announced. The series now includes:

Geo 591—Field Study (Local)
Geo 592—Field Study (Puerto Rico)
Geo 593—Field Study (Europe)

Geo 600 **Research Report (2)**
The research report produces experience in research techniques and methods of reporting findings.

Geo 610 **Thesis (3)**
A thesis is built around a research problem for which the student develops a theory or proposition and investigates the available information on the subject.

GERMAN See Foreign Languages

Health and Physical Education

Health Education

HEd 500 **Family life and sex education: workshop (3)**

Objectives, content, methodology, and evaluation of family life and sex education programs. Designed for prospective and in-service elementary and secondary teachers, nurses, and community leaders who work professionally with children and youth. Guest speakers and resource persons are utilized; films and other instructional materials are reviewed.

HEd 540 **School health problems (3)**

In-service training in school health problems, using the case technique method and a wide variety of materials, methods, and resources.

HEd 541 **School–community health education workshop (3)**

Common health-education problems in the home, community, and school. In-service training in health education; developing effective follow-up programs in health services; coordinating the efforts of allied health agencies; promoting interest in local health units. The place of mental health in the total health program.

HEd 565 **Scientific bases for health (3)**

Past and recent scientific developments related to selected physiological health problems. Critical analysis of modern research findings which contribute to basic content in health education. The practical application of these findings through health behavior.

HEd 567 **Sociological bases for health (3)**

Past and recent scientific developments related to selected sociological health problems. Critical analysis of modern research findings in the areas of social health and mental health; the place of these findings in the basic content in health education and their practical application through group behavior.

Physical Education

PEd 500 **Methods and materials of research in health and physical education (2)**

Techniques of research in education applied to the field of health, physical education, and recreation.

PEd 502 **Elementary physical education workshop (2)**
Orientation for the teaching of elementary physical education. Principles and practices; appropriate activities for various grade levels.

PEd 510 **School and community recreation (3)**
Community recreation with emphasis on the role of the school in the total program.

PEd 512 **Outdoor education workshop (2)**
Principles, procedures, and skills for conducting outdoor education programs. Seminars, lectures, field trips, and practical participation in outdoor education skills.

PEd 520 **Scientific principles of coaching (3)**
Recent trends and changes in theories and techniques of teaching sports. Mechanical principles of efficient movement. Research related to competitive performance. Specialists in several areas of coaching serve as guest panelists.

PEd 530 **Scientific bases for physical education (3)**
Study and analysis of scientific data related to instruction in physical education activities. Emphasis is on basic scientific approaches to motor learning and development of skill patterns. **Prerequisite:** anatomy, physiology, applied physiology, or equivalents.

PEd 531 **Adapted physical education (3)**
A course to help the physical educator provide a positive program of adapted physical education in the public school. Emphasis is on the application of activities to benefit the child with a temporary or permanent disability through modified activities and specific corrective exercises.

PEd 534 **Modern principles of athletic training (3)**
A lecture and laboratory course for the practicing physical educator and/or coach. Injuries which occur in class, practice, and game situations; preventive taping and wrapping; immediate first-aid procedures; principles for good professional relations with the medical profession.

PEd 550 **Historical and philosophical bases for health and physical education (3)**
Past and contemporary philosophies, principles, and objectives in health, physical education, and recreation; current trends.

PEd 551 **Seminar in professional literature in health, physical education, and recreation (3)**
A critical review of current professional literature in the area and its related fields. Emphasis centers on the application of the literature to teaching and research.

PEd 560 **Contemporary problems in health, physical education, and recreation (3)**
An overview of problems in teaching health, physical education, and recreation with relation to in-service aspects. Emphasis is on factors and variables which influence solutions of these problems.

PEd 561 **Techniques of measurement and evaluation in health and physical education (3)**
Statistical and evaluative procedures and their application to health, physical education, and recreation.

PEd 562 **Administration and supervisory practices in health, physical education, recreation, and athletics (3)**
Nature and scope of the positions of directors or supervisors of physical education, recreation, and athletics. Job specifications; operational principles and procedures.

PEd 563 **Scientific measurement and instrumentation (2)**
Experience in measurement involving operation of laboratory equipment for research in physical education.

PEd 564 **Biodynamics of human performance (3)**
Physiology of the active, vital phenomena of the organism. Emphasis is on scientific findings concerning human performance, especially under stress and accompanying physiological adjustments.

PEd 566 **Mechanical analysis of motor skills (3)**
Fundamental principles of mechanics, applied to teaching physical education and athletic activities.

PEd 570 **Curriculum in health and physical education (3)**
Contemporary trends in health and physical education curricula at the elementary, secondary, and college levels. Surveys, reports, and analyses of curriculum practices are applied to the construction of programs.

PEd 571 **Comparative physical education (3)**
Comparative study of programs outside the United States. Current philosophies, principles, and practices. Resources in complete form

PEd 572 **The child and physical education (3)**
The potential contributions of physical education to the child's physical, social, emotional, and intellectual growth and to his developmental needs and interests. Ways and means of studying and evaluating the influences of various activities on growth and development.

PEd 573 **The Olympic games—their influences on the ancient and contemporary worlds (2)**

Study of the ancient and modern games and their historical and cultural significance. Sociological and political implications of the modern games.

PEd 580 **History and philosophy of safety education and principles of accident prevention (3)**

Development of the safety movement in the United States and other countries. Place of safety education in modern living; philosophies of safety-education leaders; accident causation and prevention and their research implications. Background is given for administering school, civil defense, and emergency safety programs.

PEd 581 **Contemporary practices and program evaluation in safety education (3)**

Current practices, evaluation of existing programs, and research of current literature in safety education. Advanced techniques and methods of selecting, constructing, and utilizing instruments for evaluating safety-education programs. Problem-solving projects.

PEd 582 **Problems in traffic and driver education (3)**

Contemporary curriculum and current practices in driver and traffic education, enforcement of traffic laws and regulations, engineering problems. Problem-solving projects.

PEd 583 **Psychology in safety education and accident prevention (3)**

Effects of unconscious determinism, habits, attitudes, individual adjustment, motivation, and personality on accident causation. Research implications are explored.

PEd 591 **Research Project Seminar I (2)**

The M.Ed. candidates selects a research problem for a Research Report, reviews the literature, develops procedures, and collects appropriate data. He is expected to complete the first three chapters of his Research Report during Seminar I, and will continue to register for this course each semester or summer session until this requirement is met. He then registers for Seminar II.

PEd 592 **Research Project Seminar II (1)**

The M.Ed candidate is expected to complete his Research Report in this seminar (see PEd 591). He continues to register for the seminar until the Report is completed.

PEd 593 **Thesis Seminar (2)**

A course for the M.S. candidate, who selects a topic, reviews the literature, develops procedures, and prepares a proposal which must be acceptable to his thesis committee. The candidate continues to register for the seminar until he has met its requirements. He then registers for PEd 610.

PEd 610 **Thesis (4)**
The candidate, working with a thesis adviser or thesis committee, registers for this course until his thesis is accepted.

History

See also Social Science (SSc)

His 508 **Colonial America, 1607–1763 (2)**
The development of the thirteen mainland colonies of Anglo-America from their settlement to mid-eighteenth century. Emphasis is placed upon a conceptual anaylsis of specific events and problems.

His 509 **Revolutionary America, 1763–1789 (2)**
A study of American development from the mid-eighteenth century to the framing of the Constitution, with emphasis upon the causes of the American Revolution and the evolution of American institutions and ideas throughout the period.

His 511 **The rise of the new nation, 1789–1850 (2)**
A depth-study approach to the problems of the period, 1789-1850, with emphasis on the foundations and development of the Federalist Party, the emergence of Jeffersonian Democracy, the evolution of Jacksonian Democracy, and the events of the Middle Period leading to the decade of controversy.

His 512 **Civil War and Reconstruction: 1850–1876 (2)**
The conflict between North and South from the Compromise of 1850 through the disputed election of 1876; the intensification of the sectional struggle; secession, major wartime problems of the Union and the Confederacy, principal military campaigns; the Reconstruction Era and efforts to create a new Union.

His 513 **Emergence of Modern America: 1876–1919 (2)**
The rise of industry, labor, immigration, and new cultural patterns; emergence of new political alignments, rise of imperialism, development of liberalism and reform; America's struggle for neutrality and the nation's participation in World War I.

His 514 **The United States as a world power: 1919–present (2)**
America's development as a world power. The impact of industrialization upon society, politics, and economics; problems of the war and post-war periods; the work of our nation toward world unity.

His 515 **Problems in American constitutional development (3)**
Selected problems in the development of American constitutional government. Emphasis is on the progressive adaptation of the law to a changing social and economic order. Conflicts such as nationalism versus states' rights and vested rights versus police power.

His 516 Recent American diplomatic history (2)

American foreign policy in Europe, Asia, Latin America, and the Middle East from 1939 to the present. The objectives sought by the United States and the political, military, economic, and social policies pursued; the nature of our military strategy; the role of the United States in the future of underdeveloped countries.

His 523 Contemporary world affairs (2)

An analysis of the cold war between the U.S.S.R. and the United States and the Western democracies; contemporary efforts to maintain peaceful coexistence of the democracies with the Communist dictatorships; the impact of the nationalist movements of the peoples of Asia and Africa on contemporary world politics.

His 524 Studies in the history and culture of South Asia (3)

A study of the Indian sub-continent's dominant political, cultural, and economic institutions within their historical framework. Features which contribute to an understanding of modern India and Pakistan.

His 525 Studies in the history and culture of East Asia (3)

The traditional basis for modern Chinese, Japanese, and Korean society is examined. Emphasis is placed on the interaction between European and Asian cultures and the resulting changes brought about in East Asia.

His 526 Workshop in World Cultures (2)

A workshop for in-service teachers who are assigned to teach World Cultures in the secondary schools of Pennsylvania. Western and non-Western cultures, studied through the use of resource persons and faculty; research in recent reference materials; consultation with representatives of cultural regions.

His 527 Studies in the history and culture of Emerging Africa (3)

The emergence of modern African nationalism is examined against the background of traditional African society and the legacy of European colonialism.

His 530 Problems in Medieval Civilization (3)

Rise and fall of the Byzantine Empire, the conquests of the Arabs and Turks, and the successive crusades for the recovery of the Holy Land; the religious orders and the universal aspirations of the Papacy.

His 531 The Renaissance (2)

Causes of the Renaissance and Humanism; religious trends. Political, military, and economic developments and the artistic and intellectual achievements which laid the foundations for modern Europe. The Northern Renaissance.

His 532 The Reformation (2)
The major and minor Protestant leaders and the movements they founded; the effects on the evolving nation-states; the Church of Rome's response; the Wars of Religion and the Treaty of Westphalia; the Scientific Revolution.

His 533 Dynastic Europe: 1648–1789 (2)
The absolute dynastic monarchy as best exemplified by France, Prussia, and Russia; the middle-class challenge as typified by the English experience; the Enlightenment and the New Science; capitalism; colonialism, and the wars of empire.

His 534 The French Revolution and the Napoleonic Era: 1789–1815 (2)
The causes of the French Revolution, failure of Absolutism, the Reign of Terror, the Directory; rise of Napoleon Bonaparte, his contribution to the Revolution; the Empire—its rise and collapse; the Congress of Vienna.

His 535 Nationalism and Democracy: 1815–1914 (2)
The aftermath and effect of the French Revolutionary era; the events brought on by the growth of nationalism and democracy; the development of the industrial revolution. The roots of the First World War.

His 536 Europe since 1914 (2)
Twentieth century Europe, with emphasis on the causes of World War I; Europe between World War I and World War II; the problems of contemporary Europe.

His 540 The evolution of Modern Russia (3)
The religious, social, political, and economic forces at play in Russia during the reign of Alexander II and the period of the great reforms. The emergence and subsequent collapse of capitalist Russia through communism. An examination of the present Soviet state, ideologically and politically, and its role in the modern world.

His 541 Tudor and Stuart England (2)
Social, cultural, religious, political, and economic developments during the Tudor and Stuart reigns; building a strong Tudor monarchy; the English Reformation; Stuart Absolutism; Puritan Revolution, Civil War and the Commonwealth; the beginning of Empire; the Restoration, Glorious Revolution, and growth of English constitutionalism.

His 550 Seminar in American History (2)
Selected problems in American History. The subject will be announced in advance of each semester. **Prerequisite:** SSc 500, two courses from Group I.

His 551 Seminar in European History (2)
Selected problems in European History. The subject will be announced in advance of each semester. **Prerequisite:** SSc 500, two courses from Group II.

His 590 **Independent studies in history (1-3)**
Research projects, reports, and readings in history. **Prerequisite:** approval of Department Chairman.

His 610 **Thesis (6)**

Linguistics

Lin 501 **Introduction to linguistics (3)**
Basic concepts of language description, classification, change, reconstruction, dialectology, and sociolinguistics.

Lin 502 **Descriptive linguistics (3)**
The analysis of the phonemic, morphological, and syntactic features of several languages. Procedures for eliciting linguistically relevant data about a language from a native speaker. **Prerequisite:** Lin 501.

Lin 503 **Phonetics and phonology (3)**
Articulatory, acoustic, and perceptual aspects of speech. Distinctive feature analysis. Phonemics, phonological systems, phonotactics, and problems in phonology. **Prerequisite:** Lin 501.

Lin 504 **Morphology and syntax (3)**
Identification of minimal forms and the distributional properties of forms in the syntactic analysis of sentences. **Prerequisite:** Lin 501.

Lin 505 **Transformational grammar (3)**
Basic concepts of transformational theory and its development from its inception to the present. **Prerequisite:** Lin 501 or permission of instructor.

Lin 509 **Contrastive analysis (3)**
Contrastive analysis of languages and of standard and nonstandard varieties of English. Identification of interferences in second language and second dialect learning situations. **Prerequisite:** Lin 501 or permission of instructor.

Lin 523 **Philosophy of language [also Phi 523] (3)**
Problems of language and oral communication, with emphasis on problems of meaning. **Prerequisite:** Lin 501 or permission of instructor.

Lin 580 **Language and culture (3)**
Language as an aspect of culture; linguistic-perceptual-cognitive categories, social and psychological aspects of language. **Prerequisite:** Lin 501 or permission of instructor.

Mathematics

Mat 500 **Methods and materials of research in mathematics education (2)**
Techniques of research in mathematics education. Analysis of the types of research, selection of a problem, formulation of a plan of investigation and report.

Mat 501 **Fundamental concepts of mathematics I (3)**
A course for the elementary teacher. Development of our number system, its base, the various types of numbers and operations in mathematics.

Mat 502 **Fundamental concepts of mathematics II (3)**
Continuation of Mat 501. Structure of the real number system; basic concepts of geometry. **Prerequisite:** Mat 501.

Mat 503 **History of mathematics (3)**
Development of mathematics from prehistoric time to the present.

Mat 505 **Theory of sets (3)**
Set theory and the foundations of mathematics. Sets, subsets, set operations, algebra of sets, equivalence relations and partitions, sets of numbers, cardinal numbers, theorems of Cantor and Schroeder-Bernstein, continuum hypothesis, order in sets, ordinal numbers.

Mat 506 **Fundamentals of mathematics for physics (3)**
A critical examination of mathematics from the point of view of its physical applications.

Mat 507 **Current trends in teaching mathematics (3)**
Philosophy, techniques, subject matter, and effectiveness of current secondary school mathematics courses, examined in relation to the changing character of American society and technology.

Mat 508 **Topics in mathematics education (3)**
Topics vary from year to year depending upon student and professor interests. Typical topics which may be considered are: teaching mathematics in the urban schools, teaching mathematics to the slow learner, the psychology of teaching mathematics, and a comparative study of mathematics curricula of other countries.

Mat 509 **Seminar in mathematics education (3)**
Topics depend upon student interest. Student presentations are required and considerable informal discussion is encouraged. Guests, including secondary school principals and mathematics curriculum coordinators, are frequently invited to participate.

Mat 511 **Foundations of algebra (3)**
Basic concepts in algebra: nature and structure of the number system; sets and their use in algebra; mathematical systems in general; an introduction to abstract algebra.

Mat 512 **Modern algebra (3)**
Various abstract algebraic systems such as integral domains, rings, fields, and groups, studied from an axiomatic point of view.

Mat 513 **Linear algebra (3)**
Vectors, vector spaces, determinants, linear transformations, matrices, bilinear and quadratic forms. **Prerequisite:** Mat 512.

Mat 514 **Theory of numbers (3)**
Elementary number theory and selected topics in analytic number theory. Divisibility properties of the integers, congruences, quadratic residues and the law of quadratic reciprocity, arithmetical functions, Diophantine equations, continued fractions, the distribution of primes, the prime number theorem, Riemann zeta function, and theory of partitions.

Mat 515 **Algebra I (3)**
A detailed study of the elements of abstract algebra. Groups, commutative ring theory, modules, and associative algebras over commutative rings.

Mat 516 **Algebra II (3)**
A continuation of Algebra I. Vector spaces, representation theory, and Galois theory studied in detail. **Prerequisite:** Mat 515.

Mat 517 **Advanced topics in algebra (3)**
A course in advanced algebraic theories. Homological algebra, algebraic geometry, and algebraic number theory. **Prerequisite:** Mat 516.

Mat 521 **Educational statistics (2)**
Statistics for teachers. Measures of central tendency, deviation, correlation, tests of the significance of results.

Mat 522 **Advanced educational statistics (2)**
Continuation of Mat 521. Applications of various distributions, analysis of variance and covariance, multivariate analysis. **Prerequisite:** Mat 521.

Mat 523 **Mathematical statistics I (3)**
Mathematical treatment of random phenomena and an introduction to statistics. Elementary concepts of probability, conditional probability, compound events, expectation, random variable.

Mat 524 **Mathematical statistics II (3)**
Continuation of Mat 523, emphasizing the mathematical aspects of statistics. Correlation, sampling, tests of significance, analysis of variance, and other topics. **Prerequisite:** Mat 523.

Mat 525 **Probability and statistics (3)**
An advanced approach to the elements of probability and statistics. Discrete and continuous random variables, probability distributions, sampling distributions, interval estimation, tests of hypothesis, regression and correlation, and introduction to analysis of variance.

Mat 530 **Geometry for the elementary grades (3)**
Basic concepts in geometry for the elementary-school teacher. Informal geometry and concepts of point, line, and plane. Congruence, similarity, measurement, coordinate geometry. The postulational method. **Prerequisite:** Mat 501 or equivalent.

Mat 531 **Foundations of geometry (3)**
Basic concepts in geometry. Fundamental notions covering point, line, and plane; structure of geometric systems; Euclidean geometry. Introduction to non-Euclidean geometries.

Mat 532 **Modern geometry (3)**
Foundations of higher geometry. Axiomatics and the structure of a geometric system. Euclidean geometry from the standpoint of the Euclid and Hilbert postulates. Certain topics in projective and hyperbolic geometry are investigated.

Mat 533 **Projective geometry (3)**
An algebraic approach to projective geometry. Invariant theory, projective spaces, conics and quadratic forms, and subgeometries of real projective geometry.

Mat 534 **Differential geometry (3)**
Modern differential geometry. Calculus on Euclidian space, frame fields, calculus on manifolds, shape operators, and Riemannian geometry.

Mat 535 **Point set topology (3)**
A detailed study of the basic notions of point set topology. Filters, nets, separation axioms, compactness, connectedness, and uniform spaces.

Mat 536 **Algebraic topology (3)**
Algebraic topological invariants. Homotopy theory; simplicial, singular and Cech homology; and cohomology theories. **Prerequisite:** Mat 516, Mat 535.

Mat 537 **Advanced topics in topology (3)**
A special topics course in topology. Dimension theory, topological groups, Lie groups, and differential topology.

Mat 541 **Advanced calculus I (3)**
Foundations of real analysis. Limits, continuity, derivatives, sequences, Riemann integrals.

Mat 542 **Advanced calculus II (3)**
Continuation of Mat 541. Functions of several variables, partial derivatives, implicit function theorems, transformations, multiple integrals. **Prerequisite:** Mat 541.

Mat 543 **Topics in differential equations (3)**
An advanced topics course. Existence and uniqueness theorems, stability theory, singular points, regular singular points, Sturm separation theorem, and the "method of Liapunov." **Prerequisite:** Mat 565.

Mat 545 **Real analysis I (3)**
A review of the differential and Riemann integral properties of a real valued function of a real variable, generalized to an abstract setting. The derivative in terms of a linear transformation and the integral in terms of measure on a sigma-algebra of subsets of a given set. The two concepts are unified via "Stokes" type theorems.

Mat 546 **Real analysis II (3)**
A continuation of Mat 545. Introduction to functional analysis; Hilbert and Banach spaces, operator theory, spectral theory, and the Haar integral. **Prerequisite:** Mat 545.

Mat 547 **Advanced topics in analysis (3)**
An advanced topic is selected on the basis of instructor and student interest. **Prerequisite:** Mat 546.

Mat 550 **Modern techniques of teaching secondary school mathematics (2)**
An analysis of the content, philosophy, and objectives of modern courses of study. Motivation, teaching techniques, and materials are stressed.

Mat 551 **Secondary school mathematics for the low achiever (2)**
Development of materials and techniques for teaching low achievers.

Mat 552 **Materials for teaching secondary school mathematics (2)**
Examination of the materials for teaching secondary mathematics now available commercially. Creating new materials for use with specific concepts in mathematics. Includes models for teacher use and models for use by individual students.

Mat 555 **Modern techniques of teaching elementary school mathematics (2)**
Methods of teaching the new mathematics in the elementary grades. **Prerequisite:** Mat 501 or equivalent.

Mat 556 **Development of the mathematics curriculum in the elementary grades (2)**
A course designed to develop the key teacher or coordinator for the modern elementary-school mathematics program. Curriculum development, articulation with the secondary mathematics program, testing programs. **Prerequisite:** Mat 501 or equivalent.

Mat 565 **Complex variables I (3)**
Complex analysis. Complex numbers and the complex plane; analytic and meromorphic functions and their calculus and representations; elementary functions, contour integration, and an introduction to conformal mapping.

Mat 566 **Complex variables II (3)**
A continuation of Mat 565. Analytic continuation, entire and meromorphic functions, conformal mapping and the Riemann mapping theorem, univalent functions, and the principle of subordination. **Prerequisite:** Mat 565.

Mat 571 **Operations research and applied mathematics (3)**
Topics in applied mathematics selected on the basis of their applicability to industrial, governmental, and business problems. Linear and dynamic programming, game theory, extreme value problems, inventory, allocation, and queuing and search problems.

Mat 590 **Seminar in mathematics (3)**
Preparation for original research. Current topics of general interest not included in other courses. **Prerequisite:** mathematical maturity.

Mat 600 **Research Report (1-2)**

Mat 610 **Thesis (6)**

Computer Science

CSc 501 **Introduction to computer programming (3)**
Designed for the student without a background in mathematics. Nature, theory, and use of computers. Programming and applications.

CSc 510 **Computer programming and numerical methods (3)**
Algorithmic methods. The computer is used to solve a variety of numerical and non-numerical problems. **Prerequisite:** CSc 501 and one year of calculus.

Music

Mus 500 **Methods and materials of research (3)**
Basic techniques and procedures in research. Major types of research and methods for locating, evaluating, and interpreting evidence. Preparation of a research outline required.

Mus 501 **Aspects of musical style I (3)**
Selected master works from the Middle Ages to the nineteenth century. The influence of these works on musical thinking, historical and technical, is stressed.

Mus 502 **Aspects of musical style II (3)**
Selected master works, using literature of the nineteenth and twentieth centuries.

Mus 505 **Vitalizing music in the elementary school (2)**
A course designed for the elementary classroom teacher. Study of the various song series, instruments, and materials in current use.

Mus 506 **Teaching of music appreciation in the elementary grades (2)**
Primarily for the elementary classroom teacher. Provides available materials from which units of study for specific grades may be organized. Audio-visual materials receive emphasis in this examination of ways to enrich the school music program.

Mus 507 **Music education in the elementary school (2)**
A course for the music educator. Problems, procedures, and materials in the elementary school classroom. **Prerequisite:** elementary music methods, teaching experience.

Mus 508 **Music education in the secondary school (2)**
The general music class in the secondary school, with emphasis on conceptual learning, structured curriculum, independent study, and aesthetic experience. **Prerequisite:** secondary school music methods, teaching experience.

Mus 509 **Music appreciation in the general music program (2)**
Various approaches to musical understanding and heightened appreciation of music. Emphasis is upon materials which elicit response from pupils.

Mus 510 **Current trends in music education (3)**
Principles and philosophy of music education in relation to modern educational philosophy and curriculum practices. **Prerequisite:** elementary and secondary music methods.

Mus 511 **Administration of public school music (2)**
Administrative problems, curricular content and scheduling, in-service training of teachers, and supervisory planning. Discussion of problems in supervision and administration which members of the class have encountered. **Prerequisite:** teaching experience.

Mus 515-16 **Elementary Chorus, Band, or Orchestra (1)**
Primarily an elective in the Master of Arts and Master of Music curricula. In addition to performing, graduate students direct at least two full rehearsals. **Prerequisite:** ability to perform at the level of a second-year student.

Mus 517, 518 **Workshop in music history (1)**
A laboratory course for the study of music of the Medieval, Renaissance, and Baroque Periods through performance and analysis. The course is varied according to the instruments played by the students and according to their vocal ranges.

Mus 519-22 **Advanced Choir, Concert Band, Marching Band, Advanced Orchestra, Sinfonietta, or Wind Ensemble (1)**
Participation in preparation of programs for concert performance. **Prerequisite:** previous performance experience in appropriate organizations and/or admission by audition.

Mus 523 **Ensembles in piano, voice, woodwind, brass, string, or mixed (2)**
Study and performance in selected ensembles arranged to the specific needs of the students. **Prerequisite:** performance abllity at the major level.

Mus 524 **Keyboard activities for the classroom teacher (2)**
A functional study of the piano, primarily for the elementary classroom teacher. Accompanying in the classroom; rhythmic and creative activities; practical classroom materials.

Mus 525-26 **Class lessons in woodwind, brass, percussion or string (2)**
A study of techniques and literature through performance. **Prerequisite:** ability to perform at the level of a second-year student.

Mus 527 **Advanced keyboard harmony (2)**
The use of the piano as a tool in the teaching of music theory. Includes chorale harmonization, examples of the traditional sonorities, contrapuntal exercises, "free style" improvisation, and the use of contemporary techniques.

Mus 528 **Accompanying (2)**
Principles and problems of accompanying; various types of accompanying experiences in the vocal and instrumental literature. Practical experience in studio accompanying at all levels of difficulty. **Prerequisite:** 4 credits in piano.

Mus 529 **Vocal diction I (2)**

English, Italian, and Latin diction. A laboratory course to establish correct pronunciation in singing. The phonetics of these languages are used in selected song repertoire. **Prerequisite:** performing ability.

Mus 530 **Vocal diction II (2)**

French and German diction. A laboratory course as described above. Mus 529 is not prerequisite. **Prerequisite:** performing ability.

Mus 531, 532 **Opera workshop (2)**

Practical study of the techniques of producing musical plays. Course study of music and acting only. Preparation of roles, coaching, conducting rehearsals. The workshop experience may lead to a public performance of the material studied.

Mus 533 **Advanced choral conducting (2)**

Study and application of techniques for conducting performances of sacred and secular music of the various schools. **Prerequisite:** undergraduate conducting.

Mus 534 **Advanced instrumental conducting (2)**

Study and practice in conducting instrumental literature requiring advanced skill. Ability to read and conduct full scores of works for the large orchestra is developed. **Prerequisite:** undergraduate conducting.

Mus 535 **Advanced class lessons in woodwind, brass, percussion, or string (2)**

Continued study in the development of extensive repertoire and performing skills. **Prerequisite:** completion of the applied-music-major requirements at the undergraduate level, or admission by audition.

Mus 536 **Master classes in piano, organ, voice, woodwind, brass, percussion, or string (1–2)**

Discussion and performance of literature in the students' current repertoires. Demonstrations by the course professor and/or guest artists. **Prerequisite:** students must be currently enrolled for individual lessons at the major or advanced performing level.

Mus 537-38 **Individual lessons at the minor level in piano, organ, voice, woodwind, brass, percussion, or string (1)**

Individual half-hour lessons in all areas,* once weekly. An elective course for all graduate students.

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* Areas of performance in applied music: piano, organ, voice, flute, oboe, English horn, clarinet, bassoon, French horn, trumpet, trombone, baritone, tuba, violin, viola, cello, bass, percussion.

Mus 539-42 Individual lessons at the major level in piano, organ, voice, woodwind, brass, percussion, or string (1-2)
Individual half-hour lessons in all areas.* Continued study in the development of extensive repertoire and performing skills. One credit hour may be earned through performance in a graduate recital. **Prerequisite:** completion of the applied-music-major requirements at the undergraduate level, or admission by audition.

Mus 543-47 Individual lessons at the advanced level in piano, organ, voice, woodwind, brass, percussion, or string (2-4)
Individual half-hour lessons in all areas,* once weekly. Advanced studies leading to a full-length recital at the master's level. **Prerequisite:** completion of the applied-music-major requirements for the Bachelor of Music degree and/or admission by audition.

Mus 550 Piano pedagogy (2)
Principles and procedures of piano teaching at all levels. Opportunity to teach and prepare criticism. **Prerequisite:** teaching experience or evidence of pianistic background sufficient for the course.

Mus 551 Vocal pedagogy (2)
Principles and techniques of teaching voice at all levels. Materials and procedures for improving tone quality of the individual and the choral group. **Prerequisite:** teaching experience or evidence of pianistic and vocal background sufficient for the course.

Mus 552 Marching band techniques and materials (2)
The marching band, including organization, music materials, care of instruments and uniforms, marching essentials, and contemporary techniques.

Mus 553 String pedagogy (2)
Principles and procedures of string teaching. Emphasis is on problems in teaching string classes. Includes techniques, materials, and methods. **Prerequisite:** teaching experience or evidence of background in string performance sufficient for the course.

Mus 554 Pedagogy of music theory (2)
Techniques and materials for teaching music theory. A comparative study of outstanding theorists, past and present.

Mus 555 Instrumental literature (2)
Instrumental materials for all levels of public schools. Program building and music for special occasions are emphasized. Class performance, scores, and recordings are used. **Prerequisite:** instrumental methods, performing ability.

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* Areas of performance in applied music: piano, organ, voice, flute, oboe, English horn, clarinet, bassoon, French horn, trumpet, trombone, baritone, tuba, violin, viola, cello, bass, percussion.

Mus 556 Piano literature I (2)

Representative examples from early keyboard music, including harpsichord, through the mid-nineteenth century. Illustrated through performance by the instructor and members of the class and by scores and recordings. **Prerequisite:** performance ability at the major or advanced level.

Mus 557 Piano literature II (2)

Representative examples of keyboard music from the late nineteenth and the twentieth centuries. **Prerequisite:** same as Mus 556.

Mus 558 Vocal literature (2)

Classic song literature, lieder, and modern art songs. Illustrated through performance by the instructor and members of the class and by scores and recordings. Emphasis upon performance, teaching command, and program building. **Prerequisite:** 4 credits in voice, performing ability.

Mus 559 Choral literature (2)

Representative examples of choral music from the various periods are sung by the class. Research in a selected phase of the literature is required. **Prerequisite:** performing ability.

Mus 560 Woodwind literature (2)

A comprehensive evaluation of materials for solos and ensembles through performance by the instructor and members of the class and by use of scores and recordings. **Prerequisite:** performing ability.

Mus 561 Brass literature (2)

Evaluation of materials for solos and ensembles through performance by the instructor and members of the class and by use of scores and recordings. **Prerequisite:** performing ability.

Mus 562 String literature (2)

Evaluation of materials for solos and ensembles through performance by the instructor and members of the class and by use of scores and recordings. **Prerequisite:** performing ability.

Mus 565 Introduction to research in music history (2)

A careful and thorough orientation in bibliographical materials and research methods. The ability to read at least one foreign language is desirable. **Prerequisite:** approval of instructor.

Mus 566 Study and appreciation of the opera (2)

Study of the opera from its origin to the present. Works from Monteverdi and Gluck to Britten, Menotti, and Stravinsky are heard and analyzed. An elective course for all students.

Mus 567 **Study and appreciation of the symphony (2)**
Musical forms and literature of the symphony, presented in an intelligible and stimulating way. A non-technical approach to analysis and enjoyment. An elective course for all students.

Mus 568 **Music criticism and aesthetics (2)**
The nature of music, including philosophies of its meaning and evaluation of these philosophies. Study of music criticism, past and present, and exercises in reviewing concerts and recordings. An elective course for all students.

Mus 569 **Special subjects seminar (1–2)**
Significant topics presented by faculty members or visiting lecturers, usually representing the product of noteworthy research in history and literature of music. Or, designed to meet specific needs of the seminar group.

Mus 570 **Bach and his works (2)**
The life of J. S. Bach; his works for organ, keyboard, and other instruments; and his cantatas and larger choral works. This detailed study is introduced with a review of contemporary trends in music, the visual arts, history, and religion as they affected his composition.

Mus 571 **History of instruments (2)**
A comprehensive study of the appearance and uses of important musical instruments in Western Europe from the Middle Ages to the present according to chronology and category.

Mus 572 **String chamber music (2)**
Intensive study of important works of string ensemble literature through reading, rehearsing, and performing. May include a public performance.

Mus 573 **History of chamber music (2)**
The history, forms, and changing styles and media of chamber music from the sixteenth century to the present. Principal composers are studied.

Mus 574 **History of the symphony (2)**
How the symphony orchestra developed from the Baroque Period to the present in its function, literature, instrumentation, and performance practices.

Mus 575 **History of the opera (2)**
Detailed study of the composers and their major contributions to the various schools of opera. **Prerequisite:** 6 credits of history of music.

Mus 576 **History of music in the United States (2)**
Analysis of music and musical trends in America from the Pilgrims to the present.

Mus 577 **Music in non-western civilizations (2)**
The music of pre-history, or primitive people of the present time, and the history and nature of oriental music and instruments.

Mus 578 **Music of the Medieval Period (2)**
Development of plainsong and secular monody and beginnings and early history of polyphony to the fourteenth century. Consideration of contemporary trends in the visual arts, history, and literature.

Mus 579 **Music of the Renaissance Period (2)**
Sacred and secular music in the Age of Dufay; changing forms and styles through the music of the Franco-Flemish Groups; the frottola and related forms; and Palestrina and his contemporaries, with a brief consideration of contemporary trends in the visual arts, history, and literature.

Mus 580 **Music of the Baroque Period (2)**
Styles and forms of Baroque repertoire; contributions of the major Baroque composers; role of music and musicians in the society of the Period.

Mus 581 **The Classical Age in music (2)**
Changing styles and forms in: the sons of J. S. Bach; the Viennese pre-classicists; the Mannheim School; opera; Joseph and Michael Haydn, Mozart and their contemporaries; and the early works of Beethoven.

Mus 582 **Music in the Romantic Era (2)**
Historical developments during the Romantic Period (circa 1800-1900). Analysis of changes and trends; comparative aspects of new forms.

Mus 583 **Contemporary music (2)**
Chronological survey of twentieth-century music. The development of styles. Technical aspects of changes occurring in melody, rhythm, orchestration, texture, tonality, and form are analyzed.

Mus 585 **Advanced band arranging (2)**
Emphasis is placed on arranging for school bands. Consideration is given to bands with inexperienced performers and limited instrumentation. **Prerequisite:** teaching experience and a knowledge of orchestration.

Mus 586 **Advanced orchestration (2)**
Original composition for orchestra. **Prerequisite:** a knowledge of the instruments of the orchestra and experience in their use.

Mus 587 **Advanced musical form (2)**
A detailed study of musical form, with emphasis on modifications of sonata form; vocal and instrumental forms of Baroque music; and forms which are unique.

Mus 588 Advanced counterpoint (2)
An advanced course in tonal counterpoint. Invention, canon, chorale forms, invertible counterpoint, and fugue. **Prerequisite:** Counterpoint I at the undergraduate level.

Mus 589 Modal counterpoint I (2)
The use of modes, musica ficta, and cadences in sixteenth century music. Experience in imitation in two parts, using all note values; double counterpoint; pronunciation; and setting of Latin texts.

Mus 590 Modal counterpoint II (2)
Continuation of Mus 589. Writing in three and more voices. **Prerequisite:** Mus 589.

Mus 591 Advanced composition I (2)
Free composition in the larger forms, employing ensembles of more than three performers; experience in writing for solo voice and chorus. **Prerequisite:** undergraduate course in composition.

Mus 592 Advanced composition II (2)
Intensive work in free composition for chamber groups and orchestra. **Prerequisite:** Mus 591.

Mus 593 Advanced composition III (2)
Continuation of Mus 592. **Prerequisite:** Mus 592.

Mus 594 Twentieth century musical styles (2)
Theoretical study of the compositional techniques of representative contemporary composers, including the study of harmony and form as these bear upon the problems. Creative work in the styles of the composers studied is attempted.

Mus 595 Electronic music (2)
Materials and techniques of electronic music and their use in composition. Includes laboratory experience in the composition of electronic music.

Mus 596 Seminar in music theory (2)
Intensive work in selected areas of music theory. Provides guidance in pursuing individual projects leading to significant current developments in the area of music theory. **Prerequisite:** permission of the Chairman of the Department of Theory and Composition.

Mus 598-99 Research seminar in music (1-2)
Emphasis is on the development of a research proposal with supporting procedures. Provides guidance in pursuing individual research topics, with tutorial assistance in form and style of research writing.

Mus 600 Research Report (1)

Mus 605 **Recital (2)**

A full public recital is required of candidates for the Master of Music in applied music. The program should demonstrate an understanding of various performance styles and ability to perform literature from several periods. **Prerequisite:** approval by committee examination.

Com 610 **Musical composition (3)**

An advanced composition of significant proportion, demonstrating skill in creative writing for a chosen medium.

Mus 610 **Thesis in music education, theory, or history and literature (3)**

Philosophy

Phi 510 **Existentialism (3)**

Background and themes of current existentialism, as reflected in Kierkegaard, Jaspers, Marcel, Heidegger, and Sartre. Evaluation of existentialism and its impact on contemporary literature, drama, art, and society.

Phi 511 **Philosophic concepts (3)**

Basic concepts of the philosophic enterprise: form, matter, the categories, cause, and purpose. The relation of premises to method and conclusions. Rival theories are compared for justification and adequacy.

Phi 512 **Contemporary ethical theories (3)**

A philosophic examination of various ethical theories of our time: pragmatism, evolution, idealism, hedonism, natural law, and other schools. Practical applications are made to such problems as authority, punishment, rights, marriage, and race.

Phi 513 **History of aesthetics (3)**

History of aesthetics, as seen in classic interpretations. Origins of art, psychological and sociological; the role of art works in the enrichment of life.

Phi 514 **Philosophy of religion (3)**

A critical study of dominant trends in religious philosophy of the Western world. Religious language, reason and faith, science, the nature of man, the existence of God, and mysticism.

Phi 520 Philosophy of mind (3)
The human mind, according to representative views. Presuppositions and implications, both scientific and philosophic, traced and analyzed. The mind-body problem; perception; memory; and the implications of depth psychology.

Phi 521 Philosophy of the social sciences (3)
Philosophic issues in the social sciences; laws, procedures and prediction. The formation of concepts and theories; evaluation of evidence and cause; determination of patterns and goals.

Phi 522 Philosophy of science [also Sci 522] (3)
The course begins with case studies in science and derives general principles from them. Scientific law, analogy, models, variant theories, confirmation, and interpretation.

Phi 523 Philosophy of language [also Lin 523] (3)
See Lin 523 under Linguistics for course description.

Phi 528 Colonial American philosophy (3)
Early American views of man, the world, and history. European heritage, native adaptations, and developments preparing for the Revolution. Particular emphasis is placed on Jonathan Edwards as a representative philosopher.

Phi 530 American pragmatists (3)
Peirce, James, and Dewey; the origin, development, and nature of their philosophy; their influence on American life. Pragmatic views of knowledge, ethics, law, and society.

Phi 531 Oriental philosophy (3)
Central figures and classic teachings of Eastern philosophy and religion: Islam, Hinduism, Buddhism, Confucianism, Taoism, and Shintoism; naturalistic and humanistic elements of decisive influence on the culture of the Orient.

Phi 535 Practical logic (3)
Principles of clear reason and valid inference, with application to specific contemporary problems. Induction, deduction; the syllogism, fallacies, material logic, and logical procedures in the natural and social sciences.

Phi 540 Plato seminar (3)
Plato's life, development, and doctrines. Several chief dialogues, from the standpoint of critical interpretations.

Phi 541 Aquinas seminar (3)
Major themes of St. Thomas from the **Summa Theologica** and the **Summa Contra Gentiles.** His view of man, the good, the beautiful the true, the state, the world of Nature, and of God.

Phi 542 **Kant seminar (3)**
A study of Kant's **Critique of Pure Reason,** with reference to his development and his contributions to ethics, aesthetics, and philosophy of religion.

Phi 610 **Thesis (6)**

Physical Science

PhS 502 **Modern trends in teaching physical science (3)**
Recent materials and techniques in secondary–school physical science.

PhS 504 **Foundations of physics (3)**
Introduction to the structure of physics. Mathematical formulation of classical physics; vectors, mechanics, waves.

PhS 505 **Modern concepts in physics (3)**
Review of electricity and magnetism, the nature of radiation, quantum and atomic physics, radioactivity. **Prerequisite:** PhS 504 or equivalent.

PhS 506 **Seminar in physical science (1)**
Topics vary from year to year, depending upon the backgrounds and interests of the students. **Prerequisite:** 3 graduate courses in physical science.

PhS 507 **Recent advances in physical science (3)**
Selected current developments in physical science; their scientific significance and social or economic implications.

PhS 510 **Electronics for teachers (3)**
Electronic circuits are analyzed, constructed, and tested. **Prerequisite:** general physics.

PhS 511 **Electricity for teachers (3)**
Analysis of the principles of electricity and electromagnetism. **Prerequisite:** ability to use differential and integral calculus, general physics.

PhS 512 **Mechanics for teachers (3)**
Mathematical analysis of dynamics and statics. **Prerequisite:** ability to use differential and integral calculus, general physics.

PhS 513 **Modern physics for teachers (3)**
Twentieth-century contributions and ideas, including special relativity, quantum theory, atomic structure, solid state structure. **Prerequisite:** general physics.

PhS 524 **Experimental physics (1–3)**
Experiments in modern and atomic physics. Experiments selected depend upon the backgrounds and interests of the students. **Prerequiste:** atomic or modern physics.

PhS 570 **Chemistry for the elementary teacher (3)**
Basic concepts in chemistry and their application to the elementary school program.

PhS 590 **History of the physical sciences (3)**
From Aristotelian concepts to modern scientific concepts.

Physics

Phy 502 **Principles of physics I (3)**
A consideration of special topics from the various branches of physics and the treatment of these problems in depth, stressing their interconnection and beauty.

Phy 503 **Principles of physics II (3)**
An extension of Phy 502.

Phy 504 **Physics laboratory (3)**
Experience with basic laboratory systems.

Phy 505 **Modern trends in teaching physics (2)**
Philosophy, techniques, subject matter, and effectiveness of current secondary-school physics courses, examined in relation to the changing character of American society and technology.

Phy 513 **Analytical dynamics (3)**
Wave propagation; Lagrange's equations and Hamilton's principle; rigid body motion; and special relativity.

Phy 514 **Heat and thermodynamics (3)**
Equations of state; first and second laws of thermodynamics; ideal and real gases; entropy; and statistical mechanics.

Phy 515 **Mathematical physics I (3)**
Selected topics of mathematics as applied to problems in physics. Topics to be covered include ordinary differential equations, complex variables and hyperbolic functions, vector calculus, and numerical analysis.

Phy 516 **Mathematical physics II (3)**
Selected topics of mathematics as applied to problems in physics. Topics to be covered include matrix algebra, Fourier's series, harmonic analysis, eigenvalues and eigenfunctions, and partial differential equations.

Phy 523 **Electronics (4)**
A laboratory course. Electron emission, rectification, voltage and power amplification, oscillators, and test circuits. Vacuum tubes and solid state circuits. One hour lecture and six hours laboratory.

Phy 532 **Nuclear physics (3)**
Basic nuclear properties, nuclear structure, alpha and beta decay, gamma radiation, nuclear reactions, particle accelerators, detection equipment, and elementary particles.

Phy 533 **Nuclear physics laboratory (1)**
Ordinarily accompanies Phy 532. Preparation and handling of radioactive samples and examination of nuclear decay characteristics and reactions. (Phy 533 may be elected without concurrent enrollment in Phy 532 upon approval by the instructor.)

Phy 541 **Special topics in physics (1)**
A consideration of special developments in physics. Their scientific, social, and economic implications are discussed.

Phy 591 **Seminar (1)**

Phy 600 **Research (1)**

Political Science

PSc 531 **Modern political theory (3)**
Critical analysis of enduring political problems, primarily in the writings of political theorists from Machiavelli to the present; basic concepts of political science; theories concerning the proper role of the state in society.

PSc 532 **Seminar in international relations (3)**
Factors which motivate the actions of nations on the contemporary scene; the machinery which members of the nation-state system have evolved for giving effect to their various policies. Methods of diplomacy, international law, and international organization.

PSc 533 **The American legislative process (3)**
The legislative process in the United States; the executive-legislative relationship; the changing role of the legislature in America's balanced government.

PSc 540 **Democracy and totalitarianism (3)**
The political principles and philosophy underlying democracy and totalitarianism; the modern configuration of these two developing lines of political thought and practice.

PSc 550 **Seminar in political science (2)**
Selected problems in political science. The subject will be announced in advance of each semester. **Prerequisite:** SSc 500.

PSc 590 **Independent studies in political science (1-3)**
Research projects, reports, and readings in political science. **Prerequisite:** approval of Department Chairman.

Psychology

Psy 501 **Introductory statistics for the behavioral sciences (2)**
Central tendency, variability, standard scores, correlation, probability, sampling, tests of hypotheses, "t" test, chi square, distribution-free statistics, introduction to analysis of variance.

Psy 502 **Advanced statistics for the behavioral sciences (2)**
Special correlational methods, analysis of variance, and analysis of covariance. **Prerequisite:** Psy 501.

Psy 505 **Advanced general psychology (3)**
Lectures and readings designed to provide a deeper understanding of human behavior through a more intensive consideration of learning, methods of psychological research and measurement, memory, cognitive processes, motivation, emotion, human development, personality, and group processes. Professions and specialized areas in psychology included. **Prerequisite:** Introductory Psychology.

Psy 550 **Seminar in psychology (2)**
Selected problems in psychology. The subject will be announced in advance of each semester.

Psy 552 **Seminar in human development and behavior: adolescence (3)**
Problems unique to the adolescent and the young adult, against the background of human physical, social, and emotional development.

Psy 554 **Seminar: adolescent case studies (3)**
A functional, case-oriented approach to guidance. Principles and techniques of studying and counseling the individual. Types of case studies; referrals; recent research findings.

Psy 557 **Psychology of adjustment (2)**
Principles of mental hygiene in relation to emotional and social adjustment.

Psy 562 **Psychology of personality (2)**
The interaction and effects of forces which affect personality development. Normal and neurotic development contrasted; principles of personality measurement explored.

Psy 563 **Mental hygiene (2)**
Ways of achieving positive mental health, including ways in which people can improve their mental health through their own efforts.

Psy 580 **Individual psychometric techniques: Wechsler and Binet Scales (4)**
Historical development, administration, scoring, and interpretation of the Wechsler and Binet scales. **Prerequisite:** Psy 501, EdC 540, plus a background in psychology and permission of instructor.

Psy 590 **Independent studies in psychology (1-3)**
Research projects, reports, and readings in psychology. **Prerequisite:** approval of Department Chairman.

Psy 595 **Introduction to clinical psychology (3)**
A basic course for psychology majors. Emphasis is on major research methods used in clinical psychology, theoretical foundations, psychodiagnostic methods, clinical patterns, methods of treatment, and the profession known as clinical psychology.

READING See Education

ROMANCE LANGUAGES See Foreign Languages

Science

Sci 500 **Methods and materials of research (2)**
A survey of scientific literature with emphasis on journals. Literature searching in the sciences. The preparation of scientific reports. Experimental design.

Sci 520 **New trends in the elementary school science curriculum (3)**
New developments in the elementary school science curriculum for in-service elementary school teachers and administrators.

Sci 522 **Philosophy of science [also Phi 522] (3)**
The course begins with case studies in science and derives general principles from them. Scientific law, analogy, models, variant theories, confirmation, and interpretation.

Sci 523 **Instructional materials in elementary science (3)**
A course designed to acquaint the elementary school teachers and administrators with the available instructional materials which will enhance the elementary school science program.

Sci 595 **Elementary school science instruction (3)**
A course designed to improve the science backgrounds of in–service elementary–school teachers and administrators through an investigation of selected science topics.

Sci 596 **Workshop in elementary school science instruction (3)**
An in–depth study of AAAS program, ESS program, SCIS program or other innovative science programs for the elementary school. Especially suitable for teachers who will be using the program. The program studied depends upon needs of teacher participants.

SECONDARY EDUCATION AND PROFESSIONAL STUDIES
See Education

Social Science

SSc 500 **Methods and materials of research in the social sciences (2)**
Required of all students in a master's degree program in the social sciences and history. Basic techniques and procedures in research; major types of research and methods for locating, evaluating, and intepreting evidence. The student develops a tentative outline, bibliography, and summary of investigative procedure for a thesis or research report which must be completed before graduation. A study in historiography and the development of the social sciences is presented as background material.

SSc 502 **Methods and materials for teaching social studies (2)**
Current practices and procedures: organization and planning; the use of classroom, library, and curriculum materials; testing, measurement, and evaluation; bibliographical sources for both teachers and students.

SSc 550 **Seminar in contemporary European culture (6)**
A fully guided tour which offers a cross-section of Europe, past and present, through visits to museums, galleries, cathedrals, music festivals, and operas. Seminars and lectures by European academicians. An annotated diary, plus a paper on some facet of the tour, is required. **Summer.**

SSc 600 **Research Report (2)**
Experience in research techniques and methods of reporting the results of research. The College libraries and nearby libraries and historical societies are the principal sources of material.

SSc 610 **Thesis (3)**
Experience in research techniques and methods of reporting the results of research. The thesis must elicit information and develop arguments to support a proposition or theory drawn from primary and secondary sources.

Sociology and Anthropology

Soc 531 **Social pathology (3)**

Analysis of pathological conditions in modern urbanized-industrialized society; the causes and possible corrections of these conditions.

Soc 532 **Historical sociology (3)**

History of social thought from the early Greeks to contemporary times. Contributions of outstanding European and American sociologists to social theory and research.

Soc 533 **American minorities (3)**

A study of racial, cultural, and religious minority groups in America today. Prejudice, discrimination, and possible solutions for majority-minority group tensions are examined.

Soc 550 **Seminar in sociology (2)**

Selected problems in sociology. The subject will be announced in advance of each semester. **Prerequisite:** SSc 500.

Soc 590 **Independent studies in sociology (1-3)**

Graduate research projects, reports, and readings in sociology. **Prerequisite:** approval of Department Chairman.

Ant 530 **Problems in anthropology (3)**

Major aspects of physical and cultural anthropology. Emphasis on topics suitable for discussion and study in the elementary and secondary curricula. Some background in anthropology is recommended.

Ant 540 **Ethnographic studies (3)**

An intensive survey of a single culture area. Description of the cultural ecology and its significance for the rest of the world. The specific cultural area to be studied will be announced in advance.

Ant 550 **Seminar in anthropology (2)**

Selected problems in anthropology. The subject will be announced in advance of each semester. **Prerequisite:** SSc 500.

Ant 590 **Independent studies in anthropology (1-3)**

Research projects, reports, and readings in anthropology. **Prerequisite:** Approval of Department Chairman.

SPANISH See Foreign Languages

SPECIAL EDUCATION See Education

Speech and Theatre

(Open to All Curricula)

Sph 525 **Speech and communication for teachers (3)**
Acquaints teachers (K-12) with communication models, language development, common speech pathologies, and creative dramatics so that they may develop related programs within their own classrooms.

Sph 543 **Advanced problems in public speaking (2)**
Leadership and participation in group discussion; speech making. Parliamentary procedures for large and small groups. Research project required.

SpP 544 **Survey of speech disorders (2)**
Introduction to the definition, etiology, and management of functional and organic disorders of speech.

SpP 550 **Language disorders (3)**
An examination of the neurological, psycholinguistic, and social dimensions of language. Developmental and acquired language disorders discussed in terms of etiology and preventive and corrective therapy.

SpP 555 **Foundations of research in speech pathology (3)**
An introduction to the scientific process and to the interpretation and application of research in the speech sciences. A research project outline required.

SpP 575 **Speech improvement in the elementary school (3)**
The significance of speech improvement as an integral part of the curriculum and as a supplement to speech therapy. Emphasis is on current materials and methods.

ThA 536 **Producing the television program [nondramatic] (3)**
Basic concepts of television planning and production for the nondramatic format. The student uses the tools of television. (Lecture and laboratory.)

ThA 537 **Television program directing [dramatic] (3)**
Continuation and development of skills and knowledge in the use of television equipment, application of the arts of the theatre and film. (Lecture and laboratory.) **Prerequisite:** ThA 536.

URBAN EDUCATION See Education

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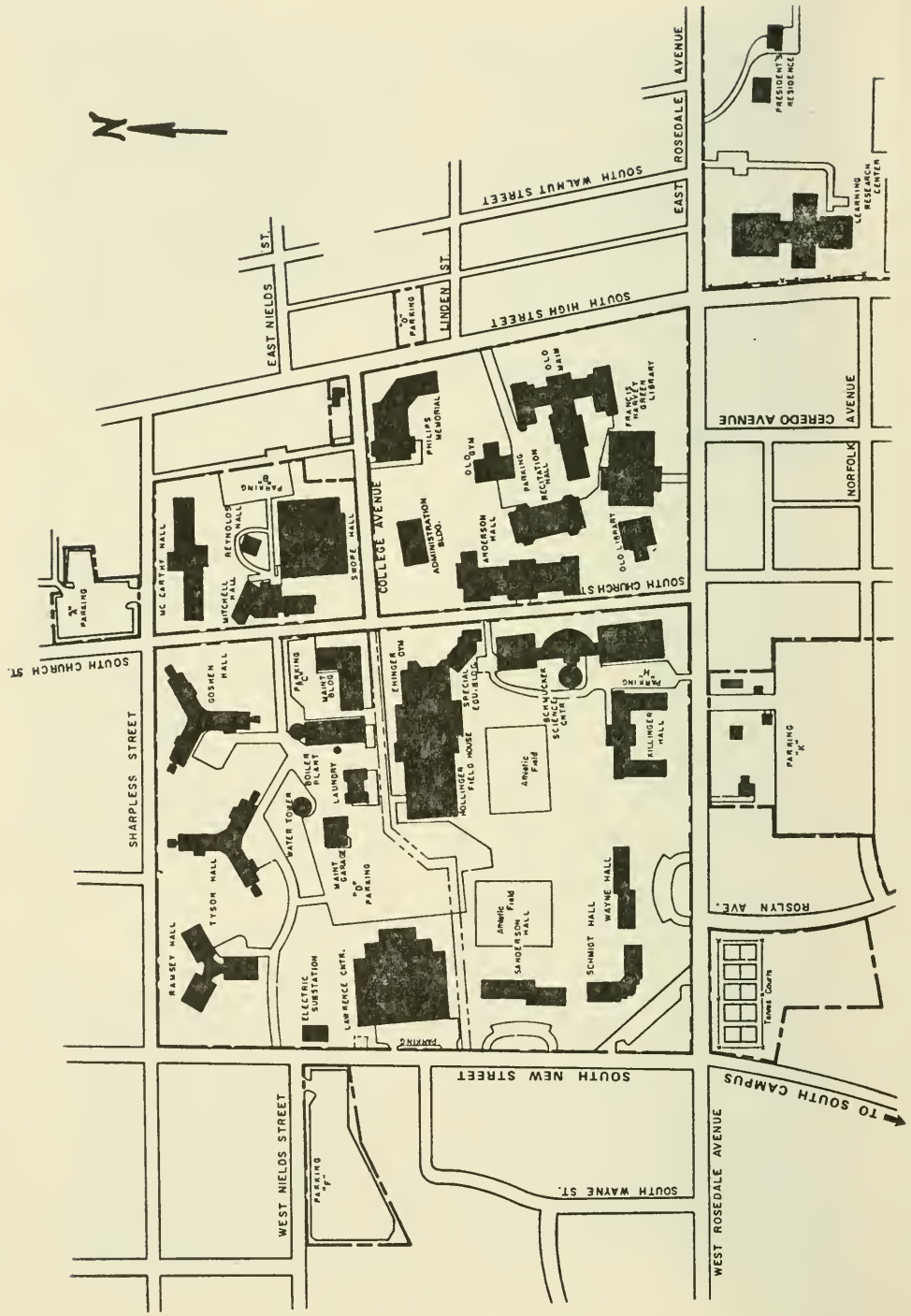
N
EAST NIELDS ST.
SOUTH WALNUT STREET
EAST ROSEDALE AVENUE
SOUTH HIGH STREET
LINDEN ST.
"O" PARKING
PRESIDENT'S RESIDENCE
LEARNING RESOURCES CENTER
COLLEGE AVENUE
PHILIPS MEMORIAL
OLO GYM
OLO MAIN
FRANCIS HARVEY GREEN LIBRARY
ADMINISTRATION BLDG.
ANDERSON HALL
PARKING RECITATION HALL
OLO LIBRARY
SOUTH CHURCH ST.
CEREDO AVENUE
NORFOLK AVENUE
"X" PARKING
MC CARTHY HALL
REYNOLDS HALL
HITCHELL HALL
PARKING
SWOPE HALL
GOSHEN HALL
PARKING "C"
MAINT. BLDG.
LAUNDRY
BOILER PLANT
WATER TOWER
MAINT. GARAGE
"D" PARKING
EHINGER GYM
SPECIAL EDU. BLDG.
HOLLINGER FIELD HOUSE
ATHLETIC FIELD
BOHNUCKER SCIENCE CENTER
PARKING
KILLINGER HALL
PARKING "K"
ROSLYN AVE.
TENNIS COURTS
TYSON HALL
RAWSEY HALL
ELECTRIC SUBSTATION
LAWRENCE CNTR.
PARKING "G"
SANDERSON HALL
ATHLETIC FIELD
SCHMIDT HALL
WAYNE HALL
SOUTH NEW STREET
SOUTH WAYNE ST.
WEST NIELDS STREET
PARKING "F"
WEST ROSEDALE AVENUE
TO SOUTH CAMPUS
SHARPLESS STREET
SOUTH CHURCH ST.

Communications Directory

The College has direct dialing. For numbers not shown, call Information and Assistance: 436-1000 (Area Code 215).

	Office	Building	Telephone 436 plus:
Admissions/Applications/ Catalogues	Graduate Studies	Administration	2243
Books and Student Supplies	College Bookstore	Recitation	2242
Business/Fiscal Matters	Business Affairs	Philips	2212
Counseling	Guidance/Counseling Center	Ramsey	2611
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Curriculum:	Biology	Schmucker	2926
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Health and Physical Education (H/PEd Center)	2260	Social and Behavioral Sciences (Anderson)	2758

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